

THE MAINE COMPETITION

Architectural Design for Low-Cost Housing

SUBMISSIONS

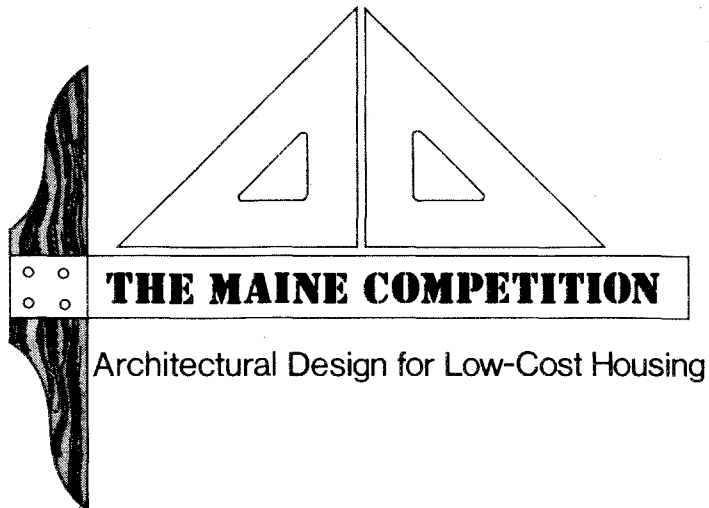
OCTOBER 1976

NA
7235
M2
M385

Maine State Planning Office.

UNIVERSITY OF MAINE
GORHAM
CAMPUS
LIBRARY
AT PORTLAND-GORHAM

7235
M2M335



SPONSORING AGENCIES

Allen Pease
Director, State
Planning Office

Genevieve Gelder
Director, State Housing
Authority

Evan Richert
Sam Ely Community
Services Corp.

The Competition was funded in part
by grants from the Maine State Com-
mission on the Arts and Humanities
and a HUD Comprehensive Planning and
Assistance Grant.

Project Staff

Philip Harris, Supervisor
Technical Services Division
State Planning Office

Avis Craig
Project Coordinator
State Planning Office

John McIlwain
State Housing
Authority

Jeffrey Pick
Sam Ely Community
Services Corp.

Phoebe McGuire Design and Layout

INTRODUCTION

This document represents what we hope is the beginning of a process seeking to explore new and innovative ways to lower the cost of housing in Maine. While the document is an end product compilation of "The Maine Competition: Architectural Design for Low-Cost Housing," we feel that the continued exploration of new home design concepts is in its early growth stages.

Contained within this booklet are the explanation, rules and regulations which guided "The Maine Competition." These are provided in order that the reader will understand the concepts and premises under which the Competition was developed. All design entrants are found in this document. The sponsors of the Competition, the State Planning Office, State Housing Authority and the Sam Ely Community Services Corporation, feel that each design offers some elements of innovation and change needed to lower housing costs and to provide more energy-efficient housing. While the Competition had winners, honorable mentions and special merits, it is felt that the real winners are the participating agencies and the residents of Maine. The ideas found in

these designs form a basis upon which we can build housing more appropriate to an age of energy shortages and which more appropriately meets our social, economic, historical and climatic characteristics.

The statements of "design concept" are presented in this for only those entries in the winning category. However, a supplemental publication contains the "design concept statements" for all of the entries. It is strongly felt that many of the design concepts are perhaps even more important than the actual designs. The "concept statements" outline many of our current housing problems and offer design, planning, management and construction alternatives to solving those problems. The reader is urged to analyze these statements as well as the various designs when reviewing the documents.

On behalf of the Competition we thank the design participants and look forward to a continued relationship with all groups and individuals working to solve the State's housing problems.

"The Competition"

PARTICIPANTS

1. Wellington Wells III
16 Sea St.
Camden, Maine 04843
2. Gordon Speedie*
RFD 2
Alfred, Maine 04002
3. Jane Sewall
South Bristol, Maine 04568
4. David Lloyd
P.O. Box 64
Bangor, Maine 04401
5. John B. Silverio
RFD 1
Lincolntonville, Maine 04849
6. M. Gibbons
c/o J. Berman
102 School St.
Gorham, Maine 04038
7. Philip A. Townley
Northeast Environmental Constr.
P.O. Box 2
Stockton Springs, Maine 04981
8. W. Dan Haden
c/o John B. Scholz, Architect
Searsmont, Maine 04973
9. Alexis Casey
RFD 2
Clinton, Maine 04927
10. Robert K. Multer
Aidco Maine Corp.
Orr's Island, Maine 04066
11. Lynn-Marie Brum
16 Tracy St.
Augusta, Maine 04330
12. Richard Morin
Paul J. Sokolak
Bowdoinham, Maine 04008
13. Stephen Kent Biggs, Principal Architect★
The Maine Group Architects and Planners
Rockport, Maine 04856
14. Charles William Burlin
Route 3, Box 244
Auburn, Maine 04210
15. William M. Thompson
82 Federal St.
Wiscasset, Maine 04578
16. Steven Moore★
John Weinrich
P.O. Box 33
Rumford Point, Maine 04279
17. Bill Nemmers
Star Route 3
Bath, Maine 04530

* (no design portfolio, narr.
statements only)

3 ★ (HONORABLE MENTION)

★ (WINNER)

18. T. Scott Teas
122 Commercial St.
Portland, Maine 04111
19. Sylvanus Doughty
Maine Form Architecture
164 Winthrop St.
Augusta, Maine 04330
20. C. Richard Malm ★
Tamworth Farm
North Blue Hill, Maine 04614
21. Nicholas Holt ☆
66 Main St.
Ellsworth, Maine 04605
22. Same
23. William L. Mc Henry
66 Main St.
Ellsworth, Maine 04605
24. David A. Joy, Architect ★
RFD 1
Alfred, Maine 04002
25. William R. Sepe ★
Box 574, 1 Maple St.
Camden, Maine 04843
26. Joshua Nadel
Paul Balmuth
43 Deane St.
Gardiner, Maine 04345
27. James E. Stilphen
Star Route 3
Bath, Maine 04530
28. Harland Hasey
447 N. Main St.
Old Town, Maine 04468
29. Jean M. and William F. Noon
Turkey Construction
Sunset Rd.
Springvale, Maine 04083
30. Robert French
Dan Skinner
Dept. of Geog./ Anthro.
Univ. of Maine portland/Gorham
Gorham, Maine 04038

ANNOUNCEMENT

The need for low-cost housing in Maine is growing steadily more pressing. It becomes all the more urgent for those organizations and agencies concerned with these problems to develop new ways of harnessing technical resources to the task. This Maine Competition, an architectural design competition for low-cost housing, represents just such an attempt.

The State Planning Office, Maine State Housing Authority and the Sam Ely Community Services Corporation (a statewide, grassroots, non-profit organization concerned with the issues of land and housing in Maine) are co-sponsoring this effort. The architectural design competition will challenge the expertise and technical competence of Maine's architectural, design and building community to address the task of innovative design for structurally sound, low-cost housing which utilizes energy efficient techniques, maximizes use of native Maine resources, and is aesthetically and functionally responsive to the needs of the Maine population and environment.

Endorsements are being sought for this design competition from all parties within the state working on Maine housing needs. Invitations are being extended to all individuals in the state concerned with housing to participate by preparing and submitting for entry designs for prototype units suitable for submission to any financing institution. A qualified panel of judges has been selected to screen and review entries and award prizes. This panel represents the private banking industry, public financing institutions, private home builders, public housing agencies, private organizations involved in low-cost housing issues, the real estate industry, consumers' associations, and the architectural community.

The judging of the entries will be based upon how well the submission synthesizes the elements of design dealing with space, function and time. The total design package plays the crucial role in the competition. While structural soundness is a key element, the reduction of costs of construction and operation, the efficiency of energy usage, and the utilization of native Maine resources should be addressed in the design submission. The design synthesis should be able to meet sound financing criteria and also be adaptable for use by a wide cross-section of Maine families.

These elements stand in delicate counterpoint to one another, and pose a challenge in creative balance and integration to the participants and the reviewing panel of judges. While the synthesis is the key element, the Competition will also highlight and give special merit to individualized and innovative design features.

Up to six winners will be chosen at the discretion of the Competition panel of judges. In addition, the judges may award honorable mentions to participants based on the quality of their submission or for particular elements therein.

As prize award for the Competition, financing has been secured for construction of the winning designs. The winners of the Competition will be announced as part of a day-long public Forum. The entire set of entries will be displayed at the Forum, and workshops and colloquia focusing on the full range of issues involved in establishing a working policy for the delivery of innovative low-cost housing. The exhibit of entries will be offered for display at various locations around the state, and to public television, to stimulate public exposure and response.

The selected winners will be requested to develop final working drawings and specifications adapted to the particular needs of the ultimate clients and sites. Those details shall be reviewed by the panel of judges for compliance with the initial entry in terms of design and cost. Final arrangements will be contingent upon the suitability of the ultimate client, contractor, and site costs.

In sum, the architectural design Competition will focus statewide attention on the need for new alternatives in response to the housing problem. It will provide four basic points of impact toward this end:

- (1) Actual documents of creative design for innovative low-cost housing;
- (2) Heightened public awareness of the housing need in Maine and increased exposure of emerging alternatives;
- (3) Cross-fertilization of ideas and concerns among the various constituencies related to the housing problem;
- (4) Exploration of new working procedures for the improved delivery of low-cost housing.

This medium can help launch a new initiative for a creative and cooperative remedy to Maine's housing needs.

INVITATION

To the Community of Architects and Designers in Maine:

This letter is being sent to you to announce The Maine Competition: Architectural Design for Low-Cost Housing, and to invite your participation in this singular event. As the enclosed "Project Profile" delineates further, the Maine Competition is being sponsored by the Sam Ely Community Services Corporation in conjunction with the Maine State Housing Authority and the State Planning Office in an attempt to harness the technical expertise of Maine's design community to the pressing need for low-cost housing.

As has become increasingly clear in the last several years, the cost of housing has soared beyond the reach of most Maine residents. In fact, today the vast majority of Maine's people can't afford a new home. The need for new housing is evident; and the resources to serve the task are at hand. The Maine Competition aims to help initiate a new process for the revitalization of home design and construction.

We invite you to become involved in the exciting process already well underway around the state of developing creative and viable alternatives in housing at a cost that the population in Maine can afford.

You are encouraged to submit an entry according to the enclosed "Entry Requirements and Procedures." Also enclosed in this packet, you will find a copy of the "Competition Regulations," as well as two data sheets - "Facts About Maine" and "Information on H.U.D. Minimum Property Standards" - to assist in preparing your presentation. The deadline for submissions is July 30, 1976.

The submissions will be reviewed by a qualified and select panel of judges on the basis of the criteria set out in the "Project Profile." Members of the panel are: John Appleton, VA Appraiser; Geraldine Brown, Consumer Representative, We Who Care; J. Douglas Brownrigg, Engineer, Director of Engineering and Technical Services Division, Maine State Housing Authority; Peter Galley, Loan Officer and Assistant Vice President, Brunswick Savings Institution; Pat Menin, Director, Shelter Institute; Robert Hutchinson, Home Builder; Douglas Richmond, Architect, A.I.A.; Earle Shettleworth, Architectural Historian, Maine Historic Preservation Commission; Lou Stack, Architect, Federal Housing Administration; and advisors Richard Hill, Engineer-Energy, Univ. of Maine, Orono, and James L. Sawyer, State Architect, Farmers Home Administration.

The panel of judges will select up to six prize winners and award such "honorable mention" as may be merited. Guaranteed construction and mortgage financing has been secured for design and construction of the prize-winning entries.

The announcement of the prize-winners will take place in Augusta as part of a day-long Forum focusing on the issues of improving the

delivery of such innovative low-cost housing. The design submissions will be arranged into an exhibit which will be offered for display at a number of locations around the state accessible to the viewing public. If the response from prospective home buyers and home-builders is positive, the designers of winning entries selected by prospective purchasers will be requested to adapt their submissions to the particular needs of the chosen clients and sites, and develop full working drawings for actual construction. Upon resubmission of these documents and approval by the panel of judges, the prize-winning designs will proceed to construction with qualified borrowers drawing upon the guaranteed construction financing pledged by the cooperating banks and guaranteed mortgage financing extended by the Maine State Housing Authority.

The effort is being made to attract the widest participation possible of both the design community and the banking community in this project. Further, the Competition will attempt to offer maximum public exposure to emerging alternatives in hopes of developing new working potential for the delivery of low-cost housing in Maine.

We urge you to join us in this venture.

Phil Harris
Philip F. Harris
SPO

John K. McIlwain
John K. McIlwain
MSHA

For the Maine Competition,
Jeff Pick
Jeff Pick
Sam Ely CSC

UPDATE NOTICE

THE MAINE COMPETITION: ARCHITECTURAL DESIGN
FOR LOW-COST HOUSING

Entry Requirements and Procedures

I. Statement of Design Concept (typed on 8½" x 11" page)

The participant shall submit a narrative statement which shall describe the basic design concept of the proposed home. The statement should indicate the major features of the design concept and how they relate to the total design package. The design should relate to Maine's present housing needs in terms of: time (1976, energy shortages, high costs, need for flexibility, environmental concerns); place (New England, Maine, locality); and purpose or function (a structurally sound home that meets a typical family need in Maine); e.g. high initial cost of a small house offset by long term low maintenance. The statement should say how the concept works; why it is adaptable to a variety of site and social situations; and how it achieves low-cost features without sacrificing quality. Diagrams and visuals may be used to demonstrate this concept.

II. Statement of Site and Social Setting (typed on 8½ x 11" page)

- A. Site - The participant shall describe the hypothetical site selected for the design. This description must include general topographic information, micro and regional climatic information, and the relationship of the site to the larger community (rural, suburban, or urban - designate at top of front page of submission). In addition, include all details such as site setting (woods, fields, etc.), prevailing winds, and sun conditions. Assume soil suitability. While the use of ideal site conditions is acceptable, consideration also should be given to designing for standard subdivisions and lots which do not always present ideal conditions.
- B. Family - The participant shall describe the hypothetical family for whom the home is designed. Such pertinent information as the size of the family and their housing needs should be provided. Describe the private, social and career functions of the house in relation to the family. Keep in mind the design should be adaptable, though designed for a specific family situation.

III. Design Portfolio

The participant shall submit two sets of schematic plans (18" x 24" vellum) in pencil, the original and one blue-line reproduction. No shadowing will be allowed. The portfolio shall contain:

- a. Title page and sketch.
- b. Site plan. Show site characteristics and their interaction (at 1/16" scale).
- c. Floor plans at ¼" scale, suitable for average contractor.
- d. Elevations at ¼" scale, showing all sides of the building.
- e. Two different but typical framing sections at ½" scale, showing complete construction from the bottom of the footing to the top of the roof.
- f. Framing plan other than typical stud walls at ¼" scale.
- g. Description of mechanical and electrical systems.
- h. Special details - unlimited appendix which details special features of the design package, suggested 1½" scale.

IV. Preliminary Cost Analysis and Specifications (typed on 8½" x 11" page)

The participants shall explain why the submitted design has a low capital and operational cost. The participant shall submit a preliminary cost analysis and a set of outline specifications exclusive of land, well, waste disposal and site development costs. The participant shall explain methodology behind cost saving figures and state overall costs in terms of costs per square foot, and energy consumption in terms of B.T.U. per square foot. Areas shall be computed from the outside of the exterior walls, and cost figures shall be computed on this basis, irrespective of wall thicknesses.

All inquiries and submissions should be sent to:

The Maine Competition
Avis Craig, Project Coordinator
State Planning Office

Competition Regulations

1. All submissions shall meet the entry requirements and procedures. Any Maine resident submitting the required entry materials will be eligible to participate in the Competition.
2. All entries shall remain unidentified except via an attached cover letter when submitting. Names of participants or participating organizations shall be deleted from the design submission; entries shall remain unidentified during the judging process until after the selection of the winners.
3. The design submission shall remain the property of the Competition; for the purposes of the Competition, the Competition shall reserve all rights to display and exhibit all submission material, with the appropriate credit. The final contractors' drawings shall remain the property of the participant and shall be displayed only with the permission of the participant.
4. The winners of the Competition will be requested to adapt their submissions to the particular needs of the chosen clients and sites, and develop full working drawings for actual construction. These details will be reviewed by the panel of judges for compliance with the initial entry in terms of design and cost.
5. The decision of the judges will be final.
6. The deadline for design submissions will be September 1, 1976.

FACTS & INFORMATION

Climate, Geography and Geology

Maine is a state of climatological contrast. The annual average temperature ranges from 37° F. in the north to 43° F. in the south. Temperatures during the summer average about 70° F., yet occasionally soar into the 90s. In the winter, the northern zone averages about 40-60 days of sub-zero temperature annually, while the coastal zone averages about 10-20 days of sub-zero temperature.

Annual average precipitation is about 40 inches. Average snowfall in Maine is 50-70 inches in the coastal zone, 60-90 inches in the southern zone, and 90-110 inches in the northern zone.

Maine's 33,200 square miles represent almost one-half of the total area of New England. Forests cover approximately 17 million acres or about 87% of the state's total land area. Approximately one-tenth of Maine's total area is water. Elevations in the southwestern region of the state are usually less than 500 feet above sea level. Across the northwest region extends a broad plateau, 1,000 to 1,500 above sea level.

The bedrock foundation of Maine, like most of New England, is made up of crystallines. Crystallines are composed of metamorphic and igneous rocks, i.e. granite. Overlying the bedrock is a cloak of unconsolidated glacial sediments made up of sand, gravel and marine clay.

Population Characteristics

The U. S. Census estimate of population for the State of Maine in 1975 was 1,059,000; up just 1% from 1974. In spite of the slowing birthrate, Maine has been experiencing a dramatic net in-migration since 1970. The average Maine family size as of 1975, was estimated as 3.07 persons per family. Since 1970 it has declined from 3.26, which was down from the 1960 level of 3.46.

The bulk of Maine's population resides in the southern and central area of the state. 568,700 persons live in an area of 3,922 square miles. Thus 54% of the Maine population lives on about 12% of the state's total land area. This six-county area has a population density of 145 persons per square mile.

The Maine population is almost equally divided between individuals in their productive working years and those persons over 65 and under 20. About 51% of the population is between 20 and 65: 11% is over 65 and 38% is under 20%.

Employment Characteristics

Manufacturing, government, trade and services are the "big four" of Maine employment. They rank in that order as employment sources, and together employed 86.3% of all Maine non-agricultural workers in 1975. In the

manufacturing sector, leather and leather products (mostly shoes) employ the most, paper and allied products, rank second, and lumber and wood products rank third. Of the total employed in 1975, 42.1 percent were females, and 57.9 were males. The unemployment rate for 1975, on an annual average, was 9.4%. That rate ranged from a low of 8.6% to a high of 11.7%.

Income Breakdown

According to 1974 Sales Management figures, the median effective buying income (gross income minus federal, state and local taxes) by household in the State of Maine was 10,698. The 1974 EBI increased 24% over 1973. The percent breakdown of households by EBI group is as follows: 27.9% earn \$15,000 and over; 25.9% earn between \$10,000-\$14,999; 11.0% earn between \$8,000-9,999; 14.7% earn between \$5,000-7,999; 9.1% earn between \$3,000-4,999; and finally 11.4% earn below \$3,000.

These income figures indicate what type of financing is available. For example, basically the average household earning under \$5,000 cannot afford a home under conventional financing. Therefore that means 72.1% of Maine's households must seek alternatives to conventional financing, subsidies or the like.

Housing

Housing Construction in Maine has fluctuated considerably from the late 60s to the present. 1972 was the peak year for the number of new units constructed. Since then, Maine has seen a decline of about 25%, while nationally the decline was worse, approximately 50%. The assistance programs of the Farmers Home Administration have been primarily responsible for taking the edge off the housing crisis in Maine.

It should be noted that 80% of the building since 1970 has been on subdivision plots.

INFORMATION ON H.U.D. MINIMUM PROPERTY STANDARDS

SITE: Landscaping will be included

Grading will include rough grading and that fill necessary to bring final grade within 8" of cellar windows and 12" of exterior siding and to maintain a 2% to 5% slope away from the foundation. Max. unretained grades not to exceed 33%.

GRADING DESIGN: Site grading shall accomplish the following:

- a. Allow drainage of surface water away from buildings and off site;
- b. Minimize earth settlement problems;

- c. Avoid concentrating runoff onto neighboring properties where erosion or other damage will be caused;
- d. Provide usable outdoor space;
- e. Minimize erosion.

SPACE PLANNING: Furnishability Requirements

Each dwelling unit shall contain space that is conducive to general family living and group activities such as entertaining, reading, writing, listening to music, watching television, relaxing and frequently children's play.

Example: Space shall be provided in the living area to accommodate the following furniture or its equivalent with comfortable use and circulation space:

- 1 - couch, 3'-0" x 6'-10"
- 2 - easy chairs, 2'-6" x 3'-0"
(1 - for efficiency apt.)
(3 - for 4 or more bedroom units)
- 1 - desk, 1'-8" x 3'-6"
- 1 - desk chair, 1'-6 x 1'-6"
- 1 - television set, 1'-4" x 2'-8"
- 1 - table, 1'-6 x 2'-6"

13

OPTIONAL MINIMUM ROOM SIZES (may be used in lieu of furnishability requirements)

Name of Space	Minimum Area (Sq Ft) (Z)					Least Dimension
	LU with 0-BR	LU with 1-BR	LU with 2-BR	LU with 3-BR	LU with 4-BR	
LR	NA	160	160	170	180	11'-0"
DR	NA	100	100	110	120	8'-4"
BR (primary) (2)	NA	120	120	120	120	9'-4"
BR (secondary)	NA	NA	80	80	80	8'-0"
Total area, BRs	NA	120	200	280	380	----

Combined Space (4)	Minimum Area (Sq Ft) (Z)					Least Dimension (3)
	LU with 0-BR	LU with 1-BR	LU with 2-BR	LU with 3-BR	LU with 4-BR	
LR-DA	NA	210	210	230	250	
LR-DA-SL	250	NA	NA	NA	NA	
LR-DA-K (5)	NA	270	270	300	330	
LR-SL	210	NA	NA	NA	NA	
K-DA (6)	100	120	120	140	160	

- (2) Primary Bedrooms shall have at least one uninterrupted wall space of at least 10'.

- (3) The minimum dimensions of a combined room shall be the sum of the dimensions of the individual single rooms involved, except for the overlap or combined use of space.
- (4) For two adjacent spaces to be considered a combined room the horizontal opening between spaces shall be at least 8 ft-0", except that between kitchen and dining functions, the opening may be reduced to 6 ft - 0". Spaces not providing this degree of openness shall meet minimum room sizes required for separate rooms.
- (5) A combined LR-DA-K shall comply with the following: (a) the food preparation-cooking area shall be screened from the living room sitting area; the clear opening between the kitchen and dining area shall be at least 4 ft - 0".
- (6) These required minima apply when the only eating space is in the kitchen.
- (7) The floor area of an alcove, or recess off a room having a least dimension less than required for the room, shall be included only if it is not more than 10 percent of the minimum room size permitted and is useful for the placement of furniture.

Bedroom Closets

Each bedroom shall have accessible clear hanging space equipped with rod and shelf which meets or exceeds the following:

Double occupancy bedrooms 2'-0" deep x 5'-0" wide
Single occupancy bedrooms 2'-0" deep x 3'-0" wide

Coat Closet

Provide at least a 2 ft x 2 ft (clear floor area) coat closet convenient to entrance.

Linen Storage shall be provided as follows:

- a. Minimum shelf area: 10 sq ft for 2 bedrooms; 15 sq ft for 3 or more bedrooms.
- b. Spacing of shelving: not less than 12" o.c.
- c. Shelving over 74" above floor shall not be counted as required storage.

General Storage

- a. In addition to required closets and kitchen storage, each dwelling unit shall have a minimum total volume of interior and exterior storage of 200 cu ft plus 75 cu ft per bedroom. Required storage space in attics shall be accessible by a permanent or disappearing stairway.
- b. Required general storage may be reduced 50 cu ft when exterior maintenance is to be performed by other than occupants.

c. At least one third of the total volume of general storage space provided shall be located for the convenient storage of items used out doors. Part of the general storage must include a utility closet for brooms, mops, and cleaning supplies etc.

MINIMUM CEILING HEIGHTS

Habitable Rooms	7'-6"
Halls, Baths	7'-0"
Sloping Ceilings	at least 7'-6" for 1/2 the room with no portion less than 5'-0". (Exception: as long as at least the required minimum room size does not have any portion less than 5'0", all sq footage beyond that may have ceiling below 5'.

CIRCULATION

Each bedroom shall have access to a bathroom without an intervening bedroom, kitchen or principal living or dining area. Bedrooms shall not afford the only access to a required bathroom except in one bedroom units. Neither a bedroom nor bathroom shall afford the only access to a habitable room.

MINIMUM REQUIREMENTS FOR ARTIFICIAL AND NATURAL LIGHT NATURAL AND MECHANICAL VENTILATION

Location	Nat. Light Glazed Area as % of Floor Area	Natural Ventilation, Opening as % of Hor. Projection
Living rooms	10	5
Dining rooms	10	5
Bedrooms	10	5
Attics & structural spaces		1/150

VARIATIONS TO STANDARDS

NEW MATERIALS AND TECHNOLOGIES - These standards are intended to encourage the use of new or innovative technologies, methods or materials. See 613. Alternatives, nonconventional or innovative methods and materials shall demonstrate, however, equivalent quality to these standards in structural soundness, durability, economy of maintenance or operation and usability.

SPECIAL CONDITIONS - Certain conditions in the geographic area or on the site may justify modification of specific standards, or make compliance with the standards impracticable or impossible. In these cases, variations to these standards may be permitted.

THE WINNERS

20

C. Richard Malm
Tamworth Farm
North Blue Hill, Maine 04614

The Concept

"The Maine House" accepts certain forces prevalent in small Maine communities and certain traditions inherent in New England. It tries to harness these forces, but refutes inherited fallacies. It is a system with enough variety to be acceptable to people of various incomes, and not a stigma to the poor.

Traditionally, Maine houses were constantly growing, from the street to the barn. The old rambling farmhouse is found everywhere. The new expanding house accepts this need for growth, but accommodates growth within the constraints of the energy scarce 1970s.

The following is a comparison of "The Maine House" with an existing situation.

Existing Housing Situation

A. A young couple buys or rents an area to place a trailer on, with hopes of saving for a house.

B. Two possibilities then occur:

1. The trailer is sold and a house is constructed. The couple make up their own plan and use construction techniques, good or bad, recommended by relatives.

2. A foundation and rooms are added to the trailer. Insulation is stuffed here and there to make it more comfortable.

The Maine House (Proposed)

A. A three bay unit is constructed for about the same cost as the trailer.

B. Additional bays are added as needed; insulated walls are demounted where additions are put and relocated on exterior walls.

C. When space requirements decrease, the house can be demounted, so that the remaining parents are not living in a large, energy consuming house. The children's room may be given to the children to begin their own home!

Reasons for Low Capital and Operational Costs

1. There are limited foundation costs, no large concrete formwork or pours.

2. There is no material waste. The module is based on available material sizes.

3. Interior partitions, which are demountable, are constructed of homosote, a 100% recycled material. This material is cheap, strong, and has superb accoustical qualities. No taping and painting are necessary as all the panels are pre-finished when manufactured. Tongue and groove joints are detailed for the panel joints.

4. Demountable exterior walls offer greater insulating value than the conventional 2 x 4 exterior bearing wall, but require less studding because they are non-bearing.

5. As the area under the house is undisturbed, minimum excavation is necessary. Natural rain runoff and soil stability can be maintained.

6. Since the frame takes the full weight of the structure, inside walls can be arranged to suit the owner, with no destructive demolition necessary.

7. The design is simple enough for inexperienced people to build their own homes and thereby save on labor costs.

8. Pole construction offers opportunities to build on difficult sites which

are unusable with conventional construction methods. Such sites are cheaper and therefore land costs may be reduced.

9. A. The house is adaptable to various orientations. Panelized glass units can face south, where appropriate, for passive solar heat gain. Summer sun shields and thermal shutters are available in the system package and would be recommended for substantial savings on energy. Mortgage financing and taxes should encourage such initial investment options.

B. Fixed triple glazing with adjacent insulated ventilating panel will be provided in the standard package.

10. The flat roof minimizes material necessary for enclosure and:

A. Offers ease of expansion with no joint and roof intersection problems.

B. Snow is retained on the flat roof for increased insulation at no extra cost.

C. Roof is easily and safely accessible for repairs and packaged energy collection units (e.g. solar collectors, heat pumps, wind mills, etc.)

D. As the flat roof is not visible from the ground, roofing materials which are inexpensive, but ordinarily unacceptable aesthetically, may be used.

11. A. The panelized system offers greater control of construction in the factory. A systemized check of heat loss of each panel can be developed to assure a tight building. Details which would be impossible to execute on the site are easily fabricated under factory conditions (i.e. double reflective air space in roof panel and glue nail joints.) Panels can be fabricated in an ideal environment without the whimsy of Maine weather conditions prevailing. Shrinkage, a major cause of cracks and leaks, is controlled.

B. Stud and joist sizes may be reduced by depending on the "stressed skin" membrane developed by glueing and nailing the panels.

12. Utility core features

A. All pipes are exposed in the utility core for easy access.

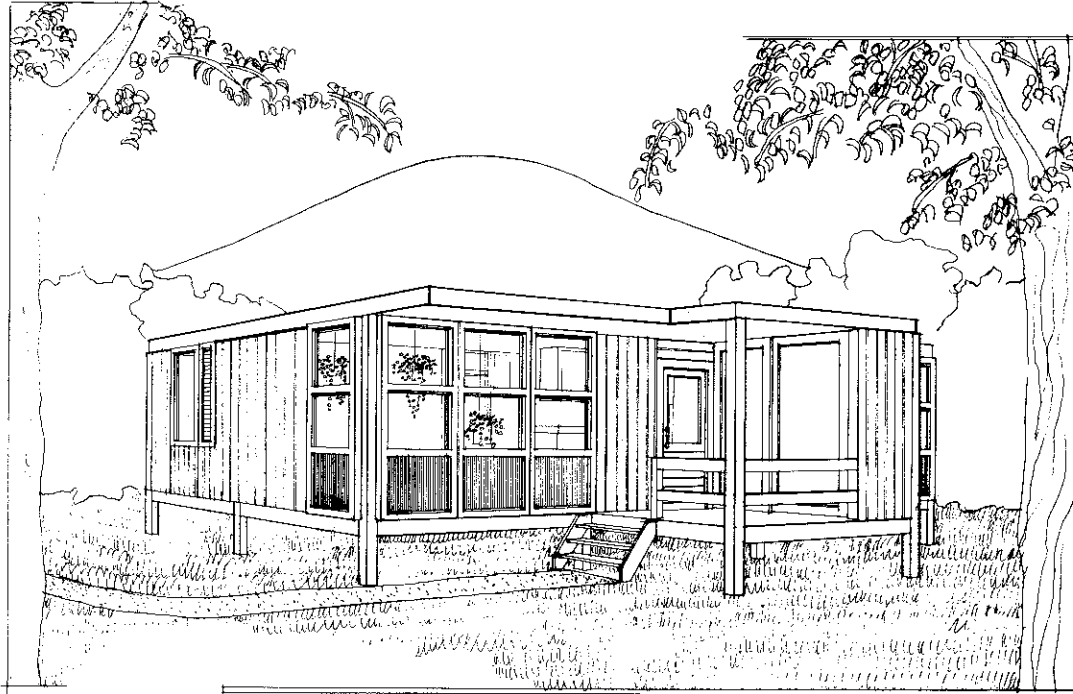
B. The oil/wood furnace offers the best heating options of the moment.

1. Wood can be used when the high maintenance it requires is within the family's abilities and when wood

is readily and cheaply available. This is the case in most of Maine. A heating system with the option of wood is very responsive to the resources of Maine.

2. Oil can be used by the elderly, the handicapped, and those who cannot maintain a wood supply.

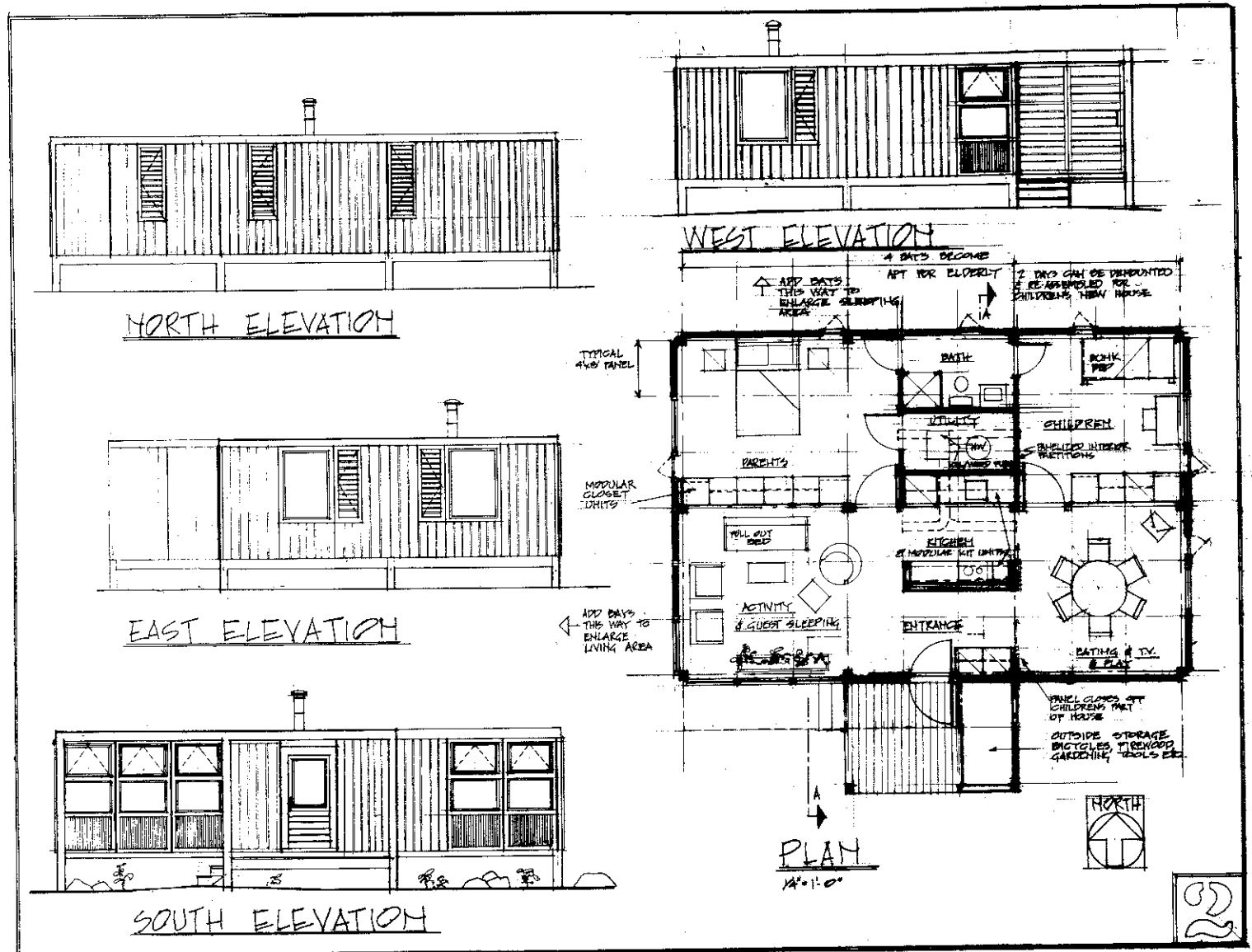
Cost: \$11-17,000 depending upon method of construction.

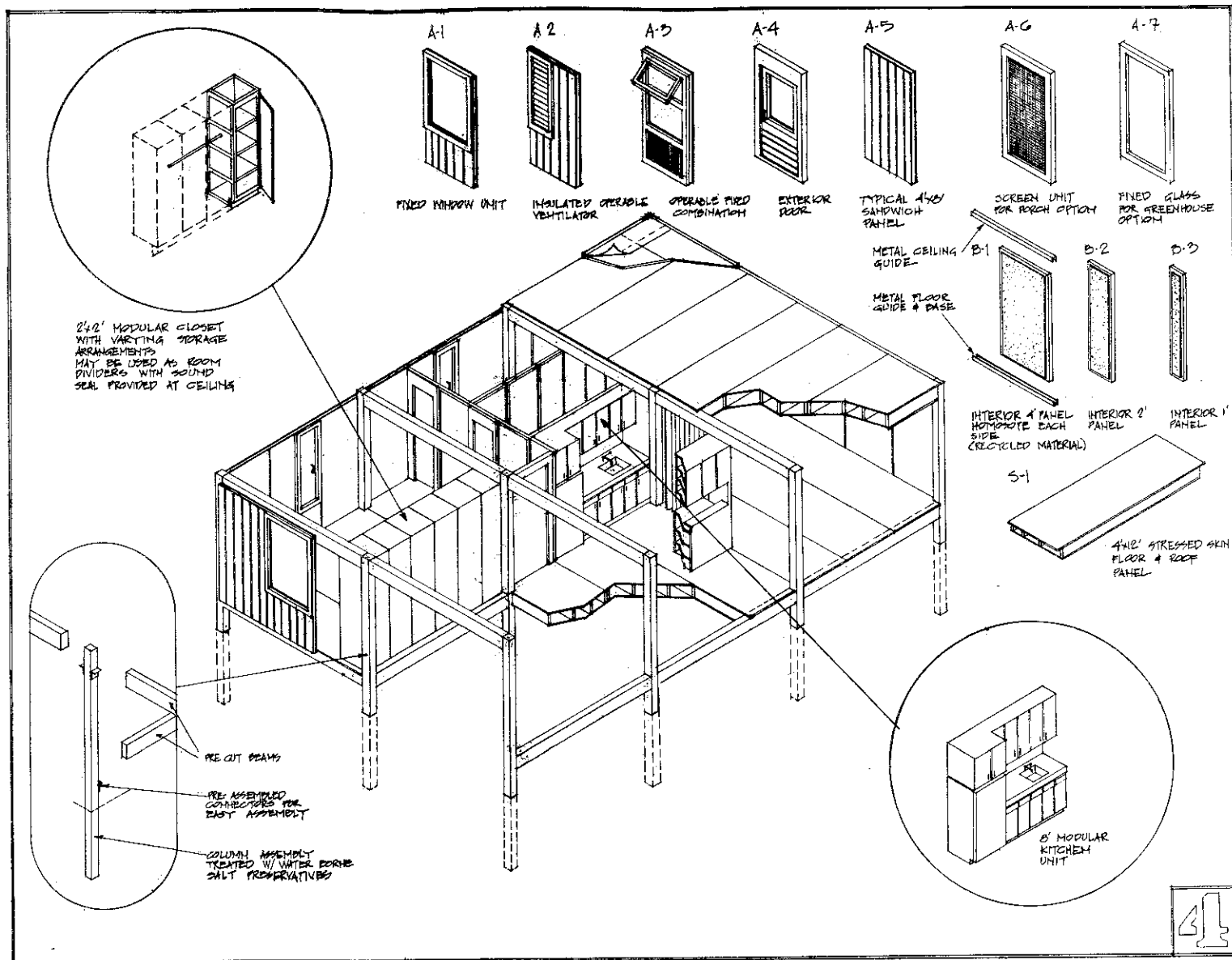


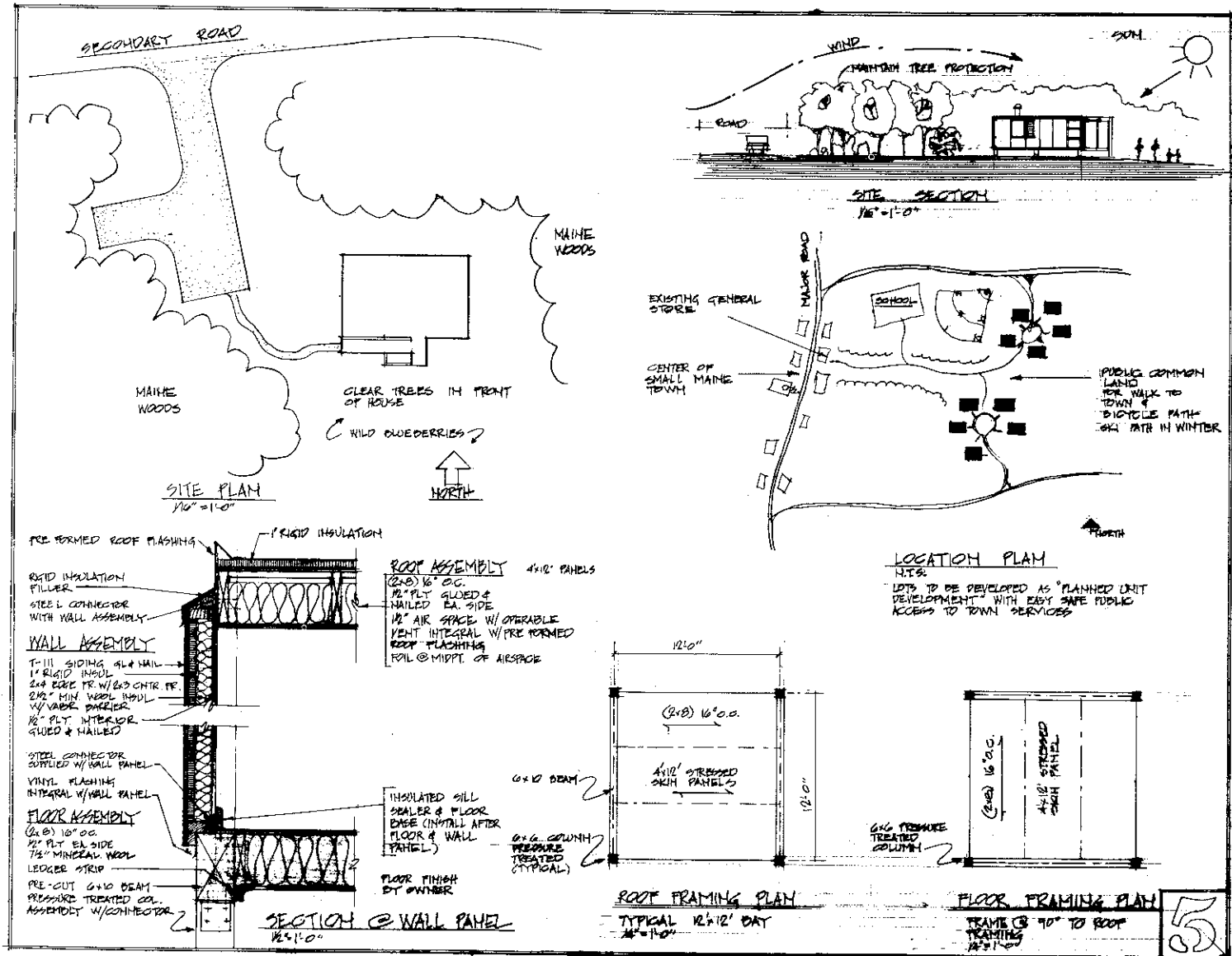
20

THE MAINE HOUSE

I







Steven Moore
John Weinrich
P.O. Box 33
Rumford Point, Maine

Design Concept

The design of a single "house" can do little to alleviate the housing crisis in Maine. The great variety of site, social, economic and family situations defies a solution that is not immediately adaptable to this vast cross section of individual needs. For this reason we have opted for a partially systemized approach toward the single family house.

By "systems" we mean the design of a "vocabulary" of architectural and mechanical parts that can be put together in a great variety of patterns, appropriate to the individual design problem.

The relative scale of each of these components is of utmost importance. Almost all "systemized" houses now marketed in the state are prefabricated "modular" types. They utilize traditional framing techniques to mass produce a single architectural form which is transported whole or in halves to a prepared site. Because of the limits of the technology and large scale of the modules, variety and choice to the owner is minimized. In order to maximize flexibility and

thus choice to the owner, we have kept system components small in scale. Spaces can then be created to suit the owners needs by the repetition of small structural components.

The terms "systems" has always conjured up visions of highly sophisticated, capital intensive materials and technology. Our approach here is the diametric opposite of that image. We have sought to consciously limit the use of industrialized materials to areas where their use would result in maximum labor savings and energy efficiency. Otherwise, we have utilized indigenous materials i.e. timber, in order to maximize capital investment in Maine resources. The net result is a slightly more labor intensive building process which may potentially aid Maine's unemployment problem and at the same time allow for more owner participation than is possible with highly industrialized modular housing types.

Given Maine's seven month building season, the benefits of prefabrication of component parts is obvious on two counts. First, it permits a greater number of units to be produced in one year without the loss of the winter months; and second, it can provide year round employment for building tradesmen who are optimally employed in both prefabrication and erection phases. In addition, the small scale of these

components permits transport in vehicles no more exotic than a standard pickup truck, which minimizes required capital and operational expense in transport.

Shop conditions, however, are not necessary for assembly of any of the components. Wall panels, for example, have been fabricated under both shop and site conditions with equal success.

The "vocabulary" of parts to which we refer above, is illustrated at the end of this section. The term "vocabulary" is a conscious analogy to the creation of a "design language." Language, by definition, limits or defines the area of communication between people, in this case the communication that takes place between architect and owner. By thus limiting the dialogue and decision making process, it is possible to bring professional services to low and medium income groups at a fraction of the cost for such services under normal conditions. The continuing involvement of the architect in each application of the system has several distinct advantages:

1. The siting of each unit can be supervised to take maximum advantage of solar, wind and topographic conditions.

2. Manipulation of the system can be maximized to suit individual needs.

3. Financing institutions can be assured of quality control through the architect's supervision responsibilities.

4. The training of craftsmen can best be accomplished through the accumulated experience of the architect.

5. Evolution and refinement of the system will be most efficiently controlled by the architect.

This process of limiting the design language is at best analagous to pre-industrial housing forms. Regionalism in materials and cultural tastes created, over time, an understood "vocabulary" of house forms and details which served as a beginning point for owner and builder to expand upon. The "saltbox," the "cape," and the "pueblo" are examples of cultural values concerning the family's relationship to the environment and to themselves.

Our effort here has been to systemize and refine a burgeoning new architectural vocabulary appropriate to contemporary or "post-industrial" values. Rapidly dwindling capital resources, i. e. material and energy, increased social mobility and the expectation of comfort,

are only some of the contemporary forces at work inside the old forms. The cape and the saltbox are not longer appropriate to our environmental or personal needs. Thus, the visual forms as well as the technology must change.

A. Post and Beam Framing

The advantages of post and beam framing over western platform framing are significant.

1. The plan flexibility of post and beam framing allows a systemized structural system to be applicable to a great variety of spatial needs, both during initial planning and subsequent renovations or expansions. The platform bearing wall is flexible in neither situation.

2. Post and beam framing utilizes structural materials far more efficiently than does platform framing, thus reducing material cost. The single family house is analagous to the extension of a "family organism." It must have a fluid circulatory system, like the blood stream; a central mechanical control center, like the nervous system; a waste disposal system, like the intestines; a protective insulating layer, like the skin; and a structural frame, like the skeletal system. The analogy goes on. But here the analogy

is relevant to the relationship of the structural frame and the insulating skin. Platform framing combines both these functions in a bearing-insulating exterior wall. These functions are not compatible in terms of the materials required by each. The structural function requires dense, linear material and the insulating function requires a very light air entrained, continuous membrane.

Thus, we have totally separated the two functions in the proposed system, resulting in a far more efficient utilization of materials.

Over a period of years we have experimented with a variety of post and beam techniques. As with any system, there are inherent difficulties, which the current porposal addresses directly;

a. The cost of bolted or lagged connections has tripled within 5 years. For this reason we have detailed simple interlocking joints using screw type "pole barn nails." Interlocking small members eliminate the need for expensive shear connectors. This amounts to a savings of approximately \$500 per unit.

b. The use of local sawn timber can be a major cost saving factor. However, local mills have difficulty supplying large sections of high quality mater-

ial that is dimensionally stable. This fact often increases the labor factor beyond the savings in material.

We have located two local mills which have the capability to size material up to 12" by milling one or two sides where critical dimensions are required. By utilizing multiple members for columns and beams, the problem of very heavy unstable members can be solved. Multiple members for columns resists the tendency for square sawn members to warp and greatly simplifies the problem of splicing. Typical columns can thus be assembled under shop conditions or on site.

B. Panelized, Membrane Wall System

As discussed earlier, the wall system proposed here is a non-bearing membrane. Its sole structural function is as diaphragm bracing to the structural frame.

The primary component of the wall system is the panel illustrated in the sketch. The panel is composed of a 2 x 3 frame, infilled with 1½" of Dow polystyrene. This core is then sandwiched on both sides with 3/8" C-D-X exterior plywood, offset 1" in both dimensions to form a T & G panel. The panels are erected onto the frame by nailing (or screwing, to permit future expansion and re-use), and form a self-flashing membrane in themselves.

Panels have been fabricated under a variety of conditions: shop prefabricated, site fabricated, and site erected layer by layer. Each method has advantages under specific project conditions. However, over a number of sequential projects, shop prefabrication will undoubtedly offer the greatest efficiency.

Panels are fabricated in each condition with window and door openings complete.

Interior and exterior finishes are applied in place, after the erection of the panel and placement of windows and doors. Finishes then can be a function of the owner's taste and budget. It is also very feasible to add the interior finish at a later date in order to defer capital expense.

Plywood and polystyrene are both highly industrialized and expensive materials. We have opted to use them in this fashion owing to their high efficiency in energy and labor conservation. The net result is a wall system with comparable cost and theoretical thermal R-Factor to traditional studded construction. However, the great advantages of the system are:

1. The predisposition of this panel to winter prefabrication, which will greatly increase labor efficiency over the working year, and thus reduce cost significantly over that time period.

2. The great reduction of air infiltration into the building and the control of moisture migration out of the building. A great deal of attention is now given to theoretical thermal resistance factors. High R-factors are of obvious value. However, current research* indicates that infiltration through the wall along studs, and around windows and doors contributed to fuel consumptions equally as conducted and radiated losses through the insulation. Also, vapor leaks around studs and electric boxes eventually contribute to the deterioration of fiberglass batt type insulation.

The proposed wall system deals with these problems directly (see heat loss calculations). The membrane is significantly tighter than studded construction thus controlling infiltration; and the interior vapor barrier is never punctured by wiring or studs, thus controlling moisture migration.

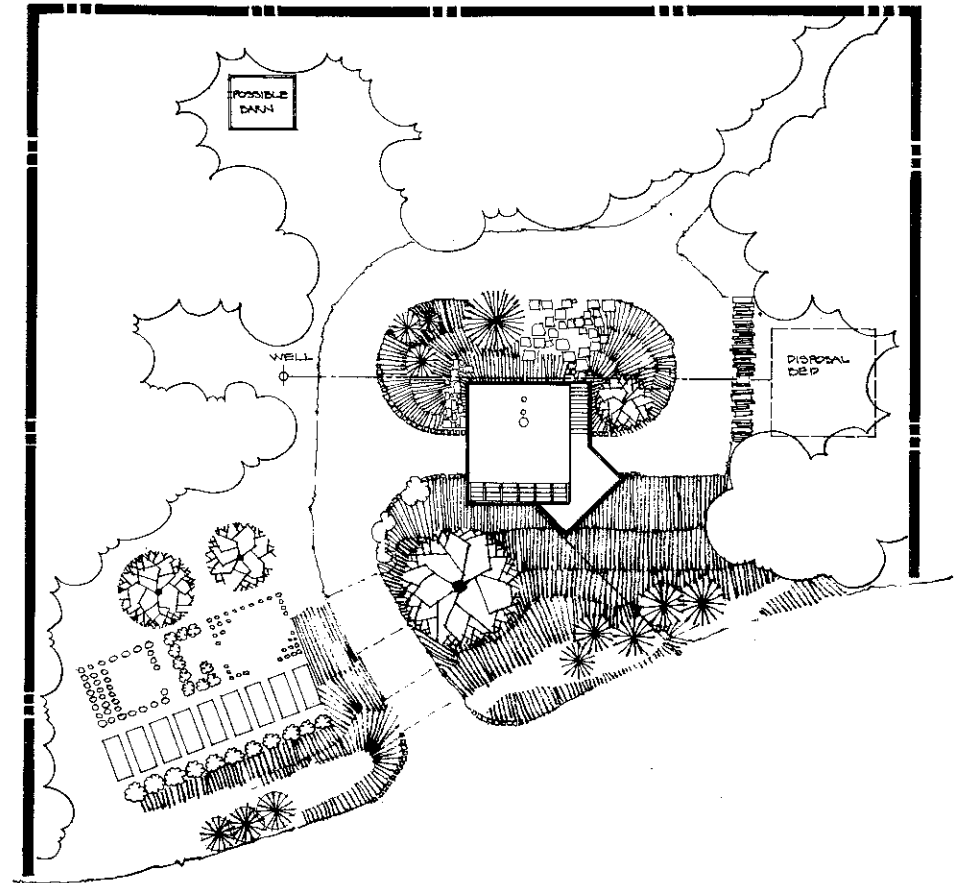
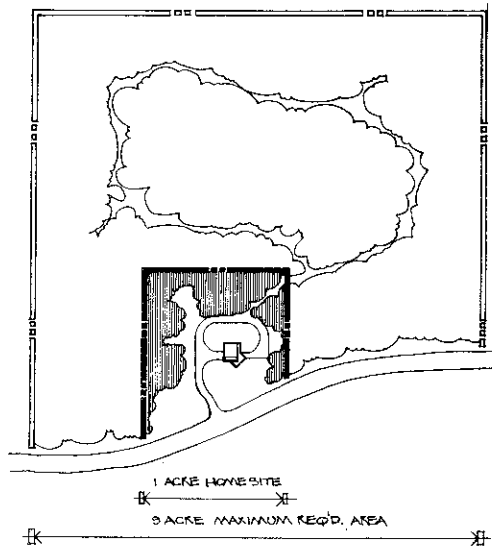
Cost: \$29,900

*Report Published by Ohio State University, Dow Chemical Company, and The American Testing Corp., July, 1976.

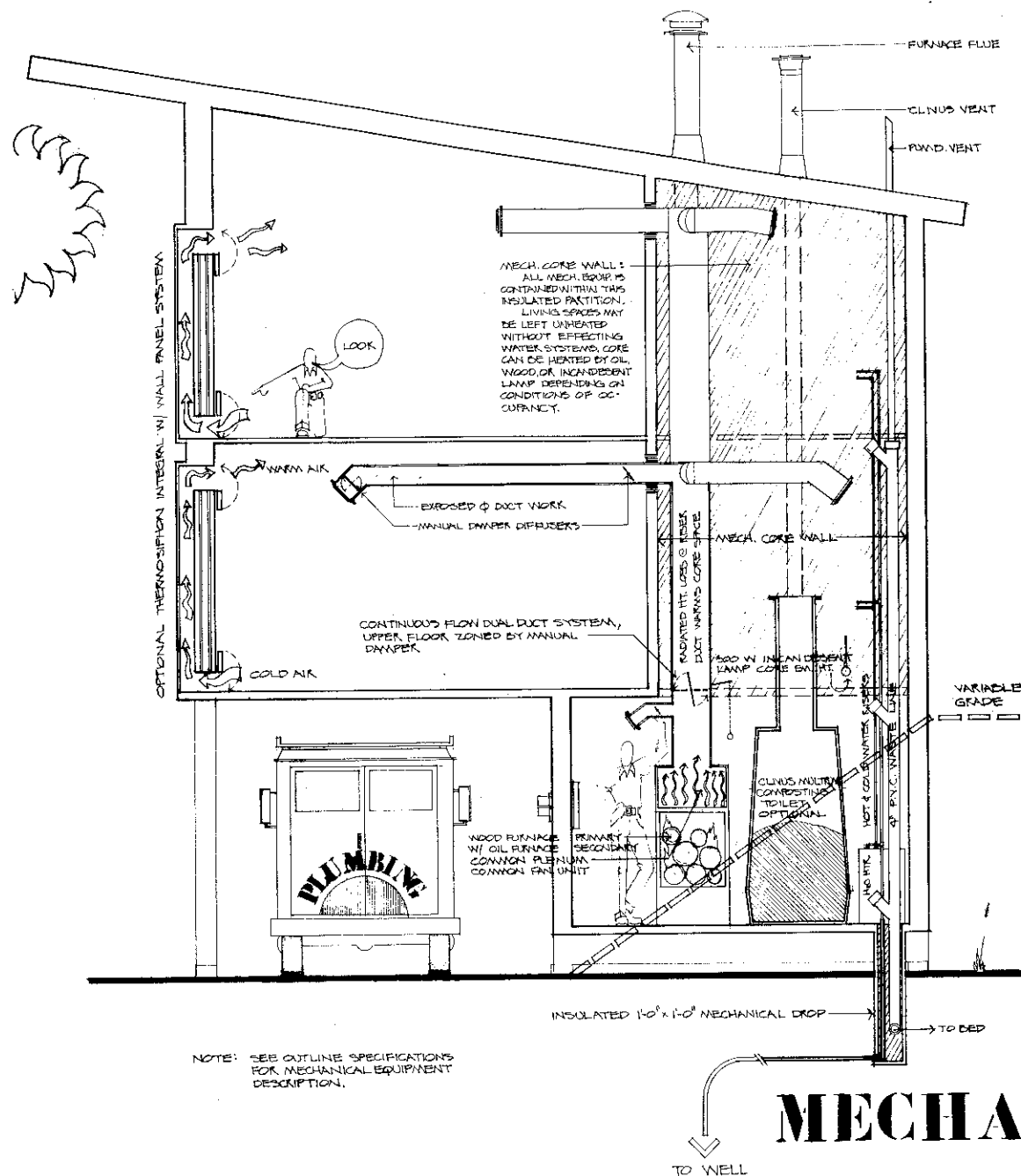


THE MAINE COMPETITION 1

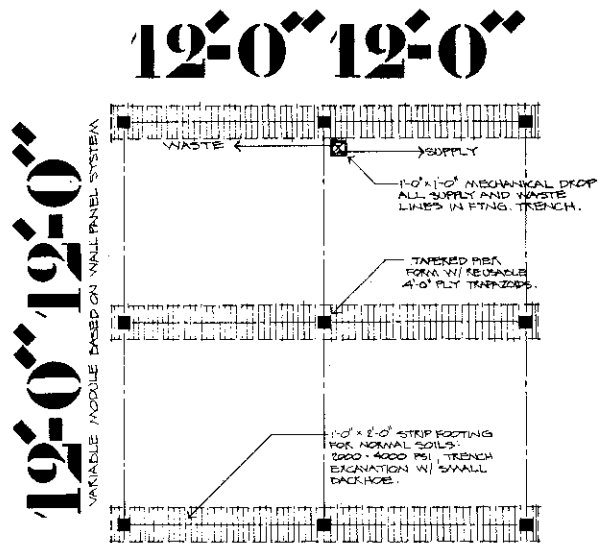
16



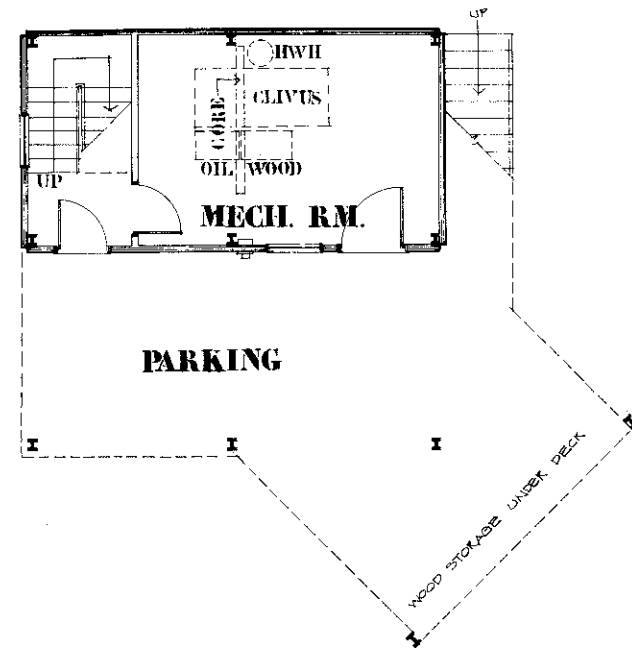
SITE PLAN 2



MECHANICAL 11

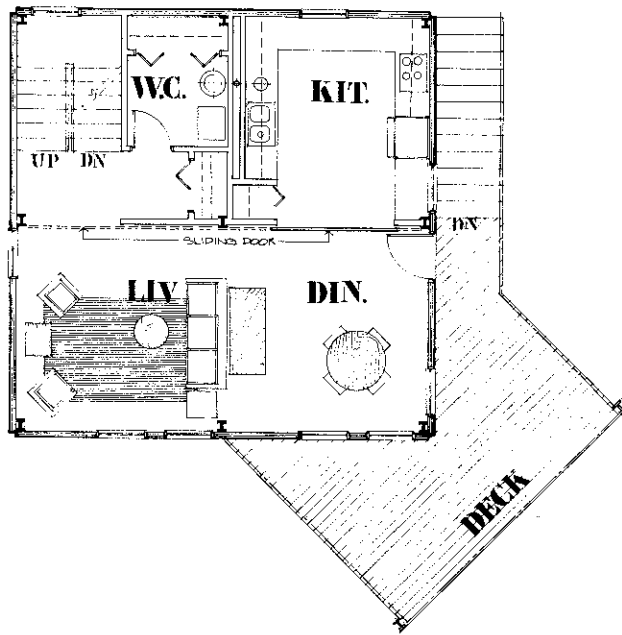


FOUNDATION

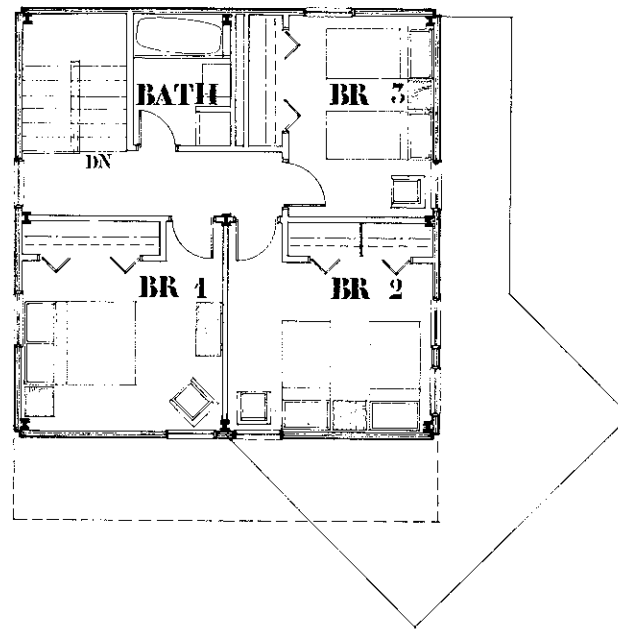


GROUND FLOOR

PLANS 3

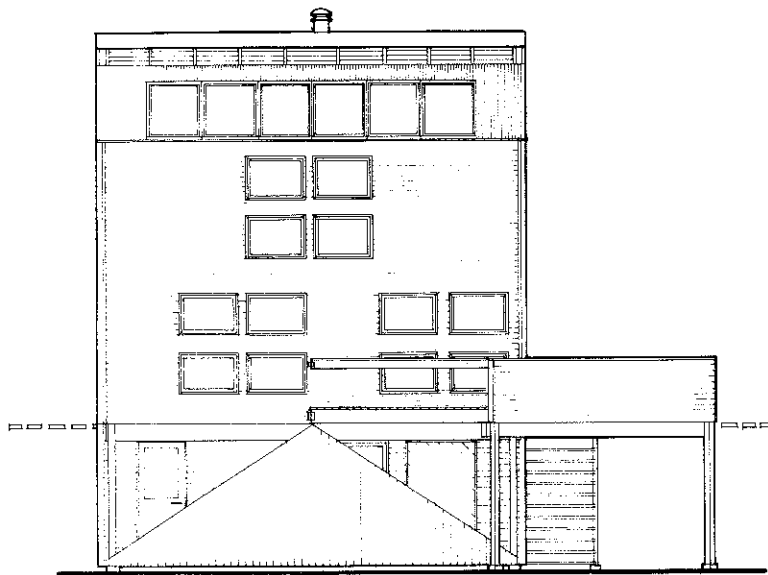


FIRST FLOOR

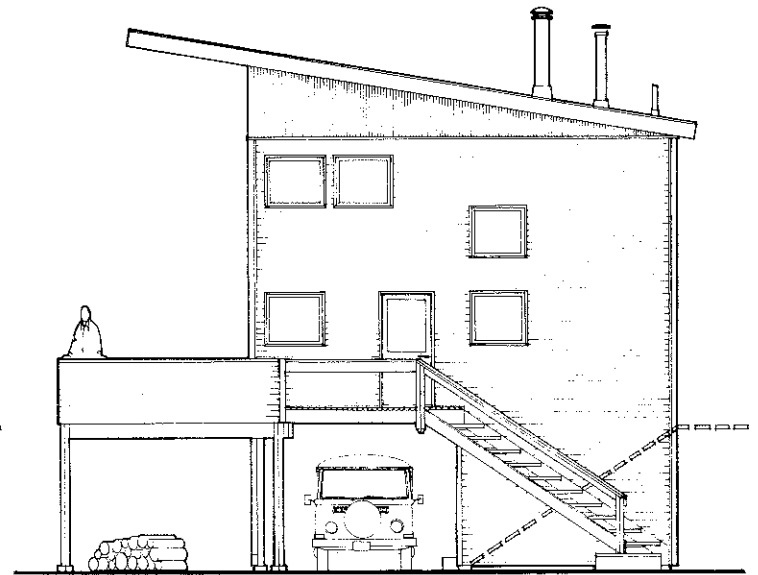


SECOND FLOOR

PLANS 4

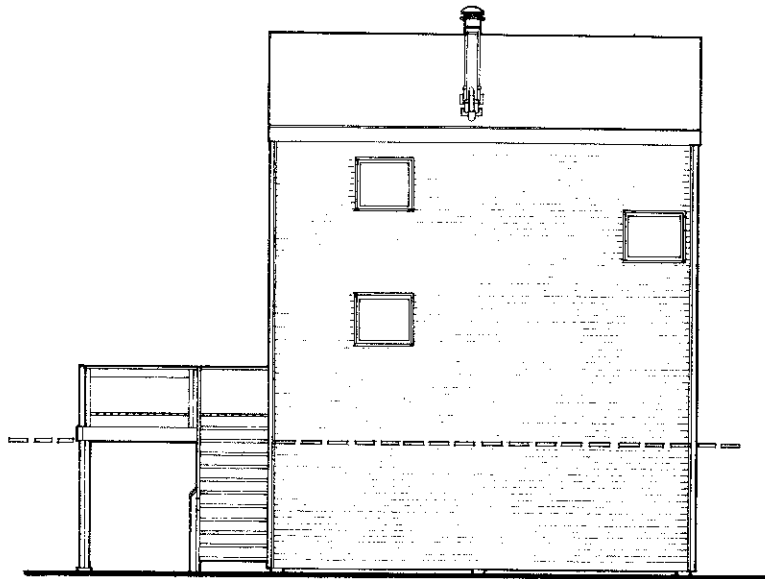


SOUTH

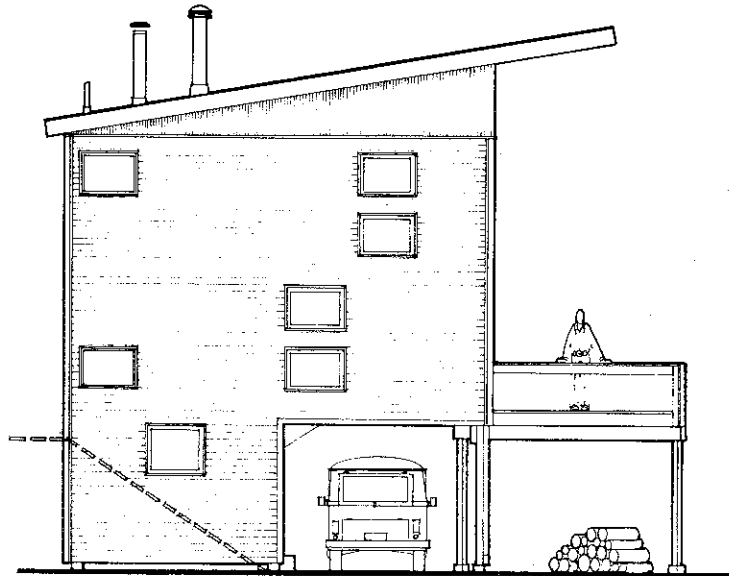


EAST

ELEVATIONS 5



NORTH



WEST

ELEVATIONS 6

William R. Sepe (Winner)
Box 574, 1 Maple Street
Camden, Maine 04843

Design Concept

1. House basic, compact, simple foundation.
2. No cellar; high water table and ledge make it an expensive and useless item.
3. House could be built first with one bedroom finished; occupant could finish the two other bedrooms.
4. Occupants can build own garage or have it done as they can afford it. Sheds or additions can be added as needed by owners.
5. Courtyard walls can be improvised by owner.
6. Mechanical equipment includes the Paloma Constant Flo tankless hot water heater, New England Gas Association Approved, saves 25% to 35% of energy used for domestic water.
7. Walls are 2" x 6" with 1" urethane insulation and 3½" of ureaformaldehyde on that. This insulation keeps the heating requirement way down; walls with 5" of insulation have R.= 28.25.

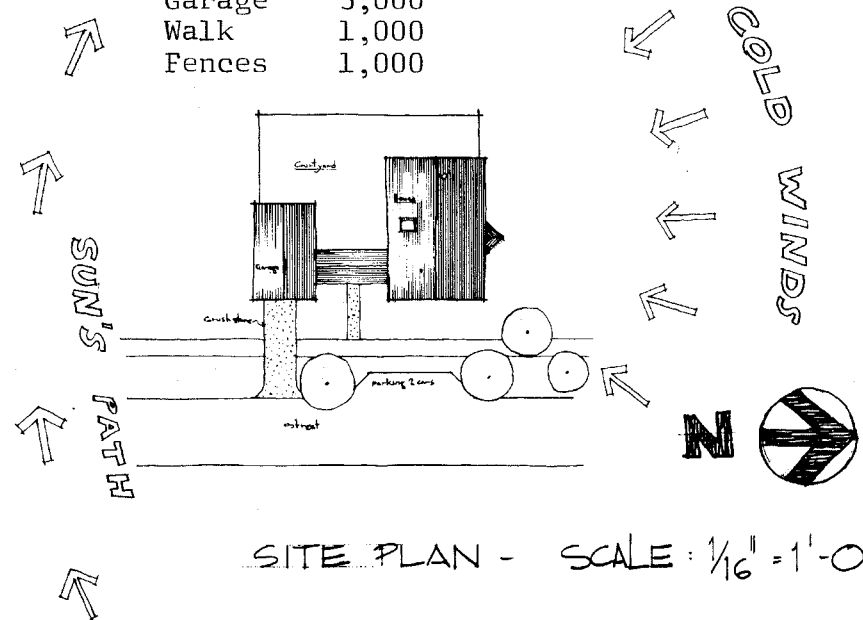
8. Shed and/or space above the garage (see section) can be upgraded by the owner and then used for a home business. Good for neighborhoods.

9. Air lock keeps house from cooling when door is opened.

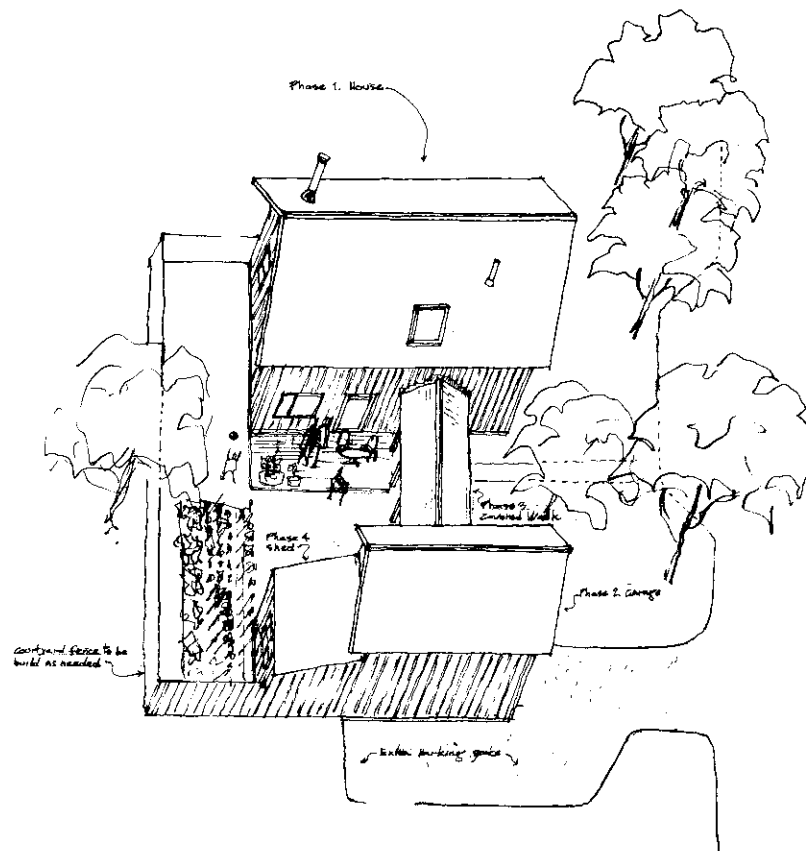
10. Toilet in air lock means children don't have to come through the house to use the bathroom. It is also separated from living and dining area.

11. Heating can be done with two direct vent gas heaters; output is 18,000 BTUH each.

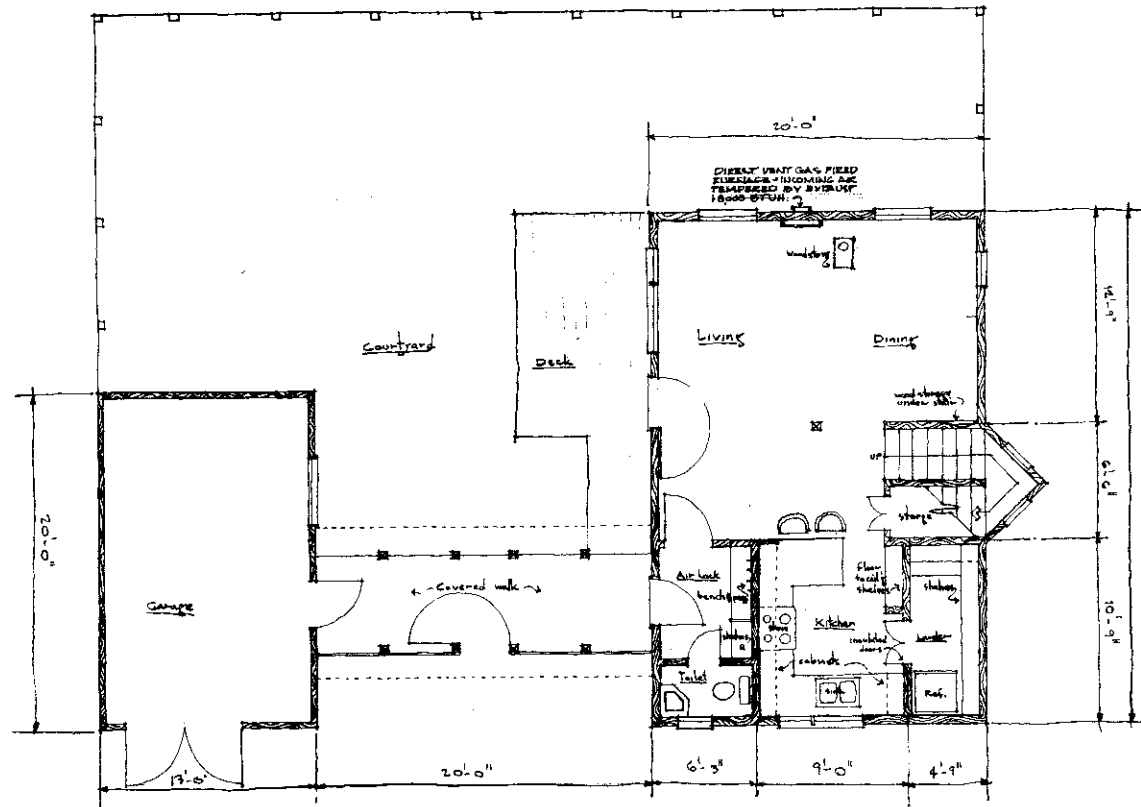
Cost:	House	\$25,000
	Garage	3,000
	Walk	1,000
	Fences	1,000



THE MAINE COMPETITION

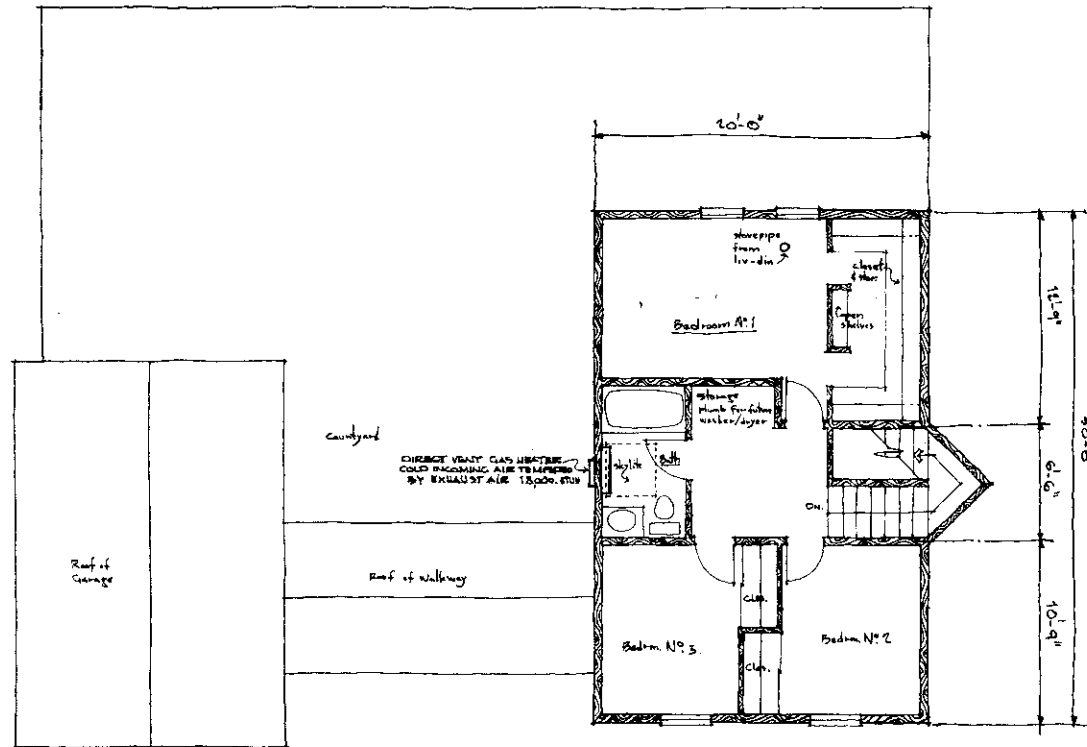


ARCHITECTURAL DESIGN FOR LOW COST HOUSING



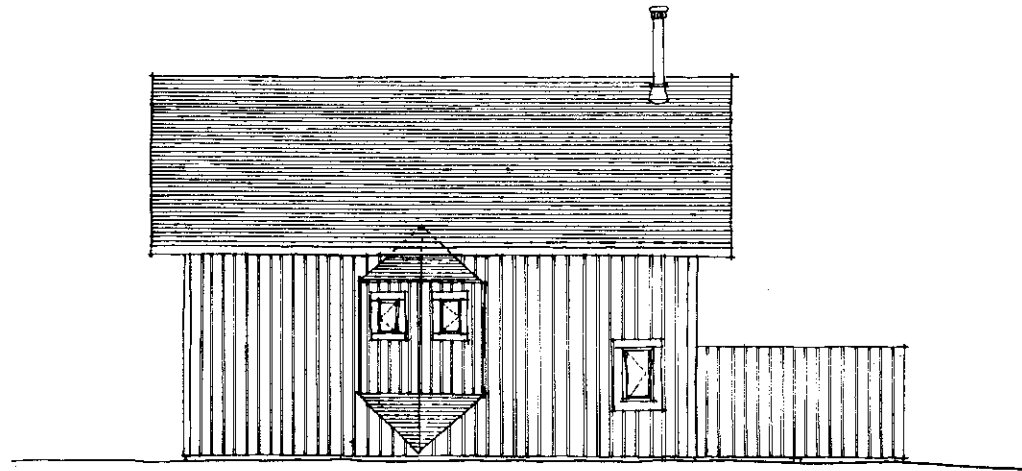
PLAN - 1ST FLOOR

SCALE: 1/4" = 1'-0"



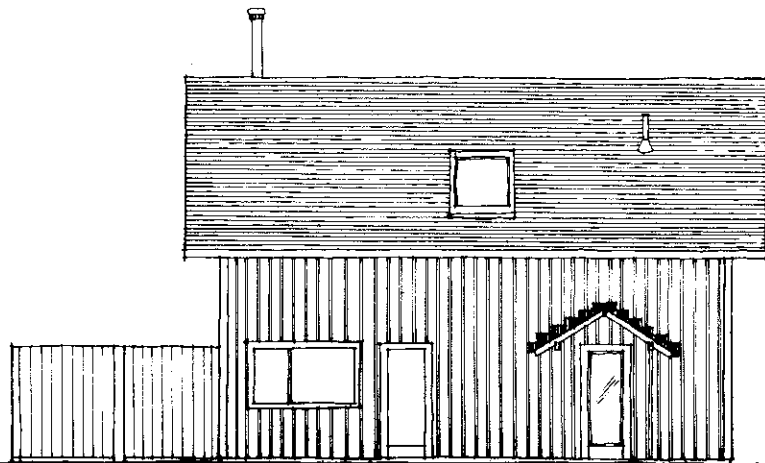
PLAN - 2ND FLOOR

SCALE: 1/4" = 1'-0"



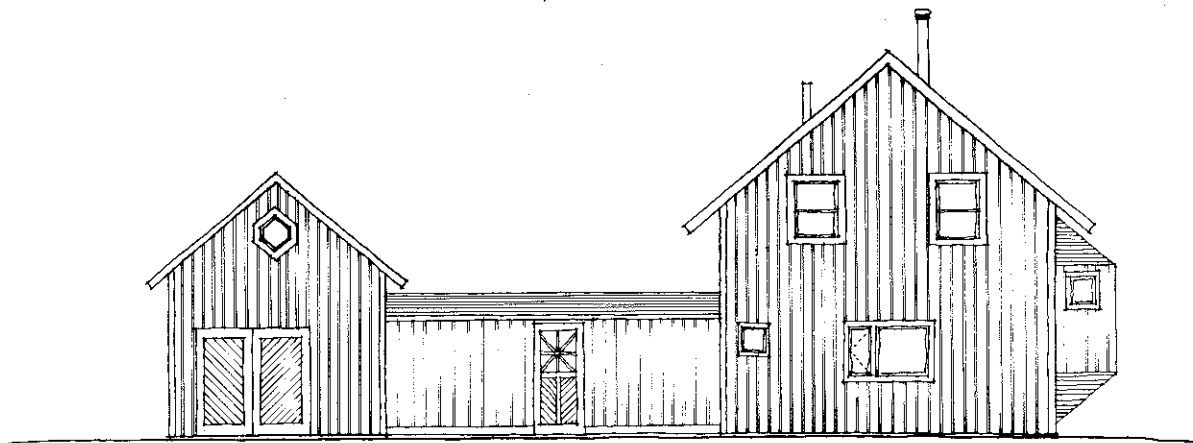
NORTH ELEVATION

SCALE: $\frac{1}{4}" = 1'-0"$



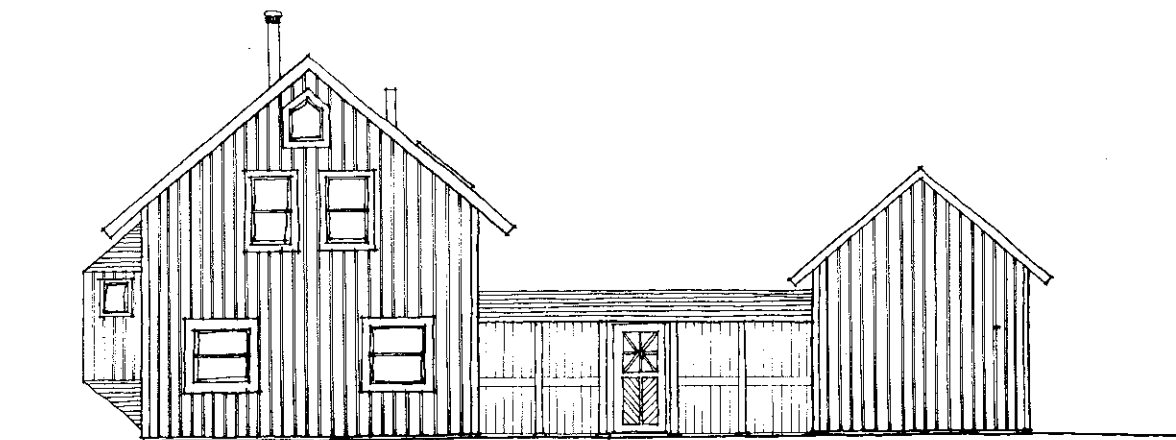
SOUTH ELEVATION

SCALE: $\frac{1}{4}" = 1'-0"$



EAST ELEVATION

SCALE: 1/4" = 1'-0"



WEST ELEVATION

SCALE: 1/4" = 1'-0"

HONORABLE MENTIONS

13

Stephen Kent Biggs
Principal Architect
The Maine Group Architects
and Planners
Rockport, Maine 04856

Design Concept

Low cost housing must not be confused with "low standard" housing as exemplified by the trailer or mobile home. We must stop looking back to the past and look instead to the present and the future and we must rearrange our sense of values. No longer can we ignore those qualities in design and construction that will alleviate energy demands in our houses.

Our dependence upon expendable resources must stop and we must turn to those resources which are permanent such as solar - and, for example, wood, which is renewable.

It is not the intention in this concept to ignore the present use of fossil fuels, but to design in such a way that they can be phased out as the supply dwindles and replaced with alternative fuels such as wood, methane, hydrogen, etc., as technology makes production feasible on an economic scale.

Allied to this must be the concept of durability - a minimum of upkeep and maintenance - and a sense of well being and comfort provided by sound design and good planning.

To achieve this goal the approach has been taken as follows:

1. For planning purposes FHA space requirements have been adhered to.
2. Reduce wasted volume of space such as attics and basements as in a typical ranch house, and apply all available cube for actual use.
3. Use material that creates a "thermal mass" and in effect acts as a heat sink to retain heat gained by both passive and active solar collectors. This mass will flatten out the fluctuations of inside temperature with the exterior temperatures. It will also allow excess heat to build up from pass-

ive gain and to be pumped from the top of the building to the lower rock thermal mass to be released slowly as needed.

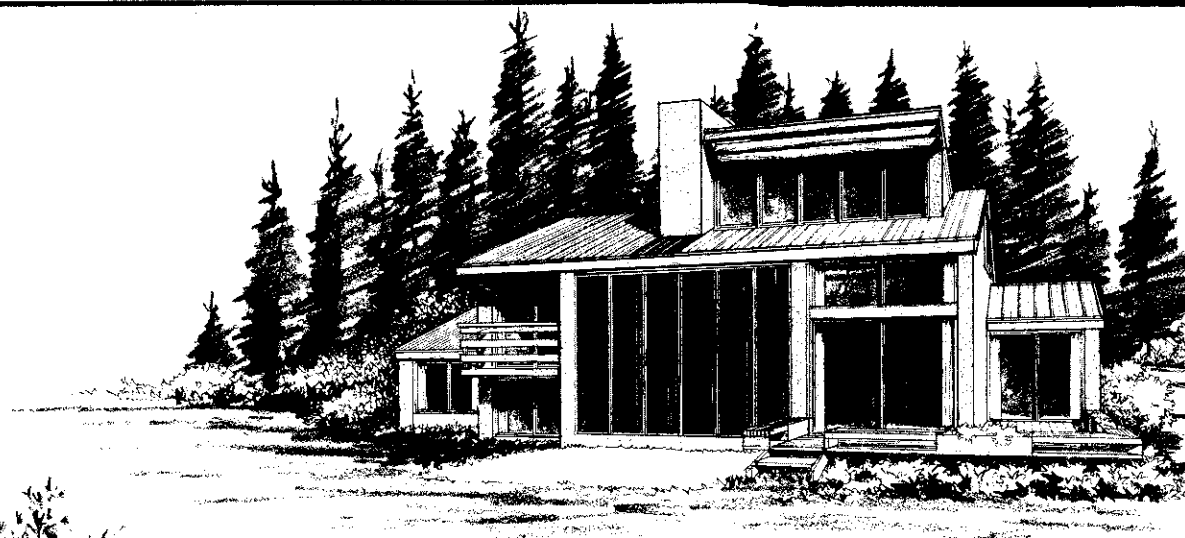
4. Use readily available materials for construction that once in place used little or no further maintenance. This has been achieved by using the BlocBond system of laying up concrete blocks dry and surface coating with an integrally colored fiber glass cement mixture to both faces. Framing has been eliminated and rough sawn 2" x 3" are laminated on edge by gluing and nailing together to form floors and roof decks. The roof is factory finished 26 guage steel glued to the 4" foam which is in turn glued to the laminated wood deck. The external BlocBond walls have 4" extruded urethane foam glued to the exterior surface of the block walls and in turn the exterior surface of the foam is coated with fiber glass to give an integrally colored, hard, water-proof surface.

The net result is a building that inside and out is finished and leaves only the wood trim to be stained as needed, and one that can be built quickly and economically.

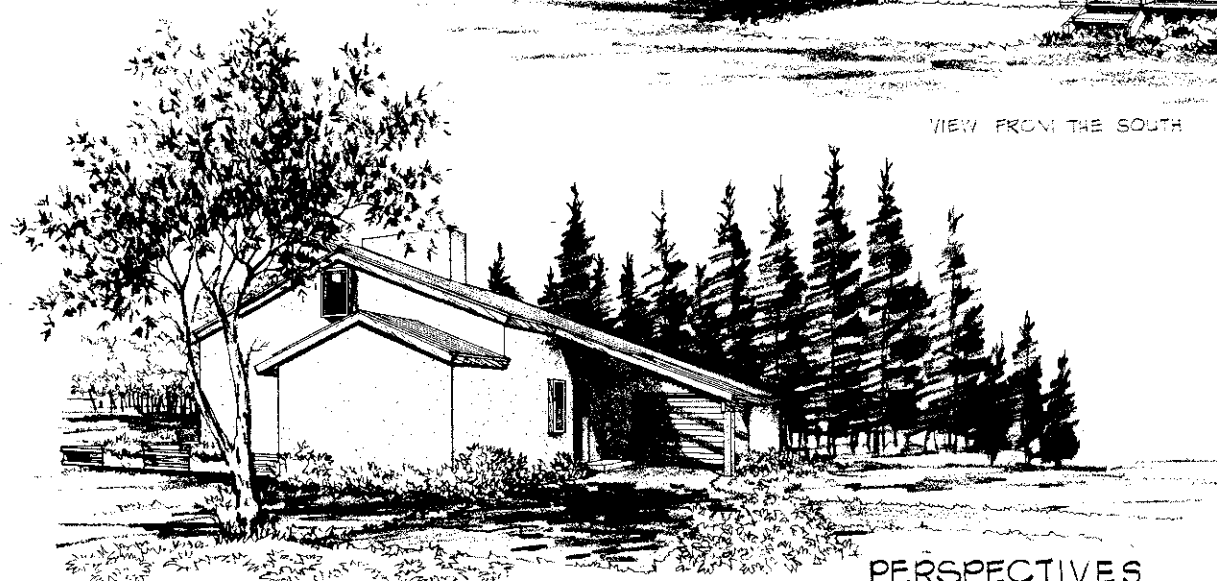
Cost: \$25,000

continued ➡

THE MAINE COMPETITION FOR LOW COST HOUSING



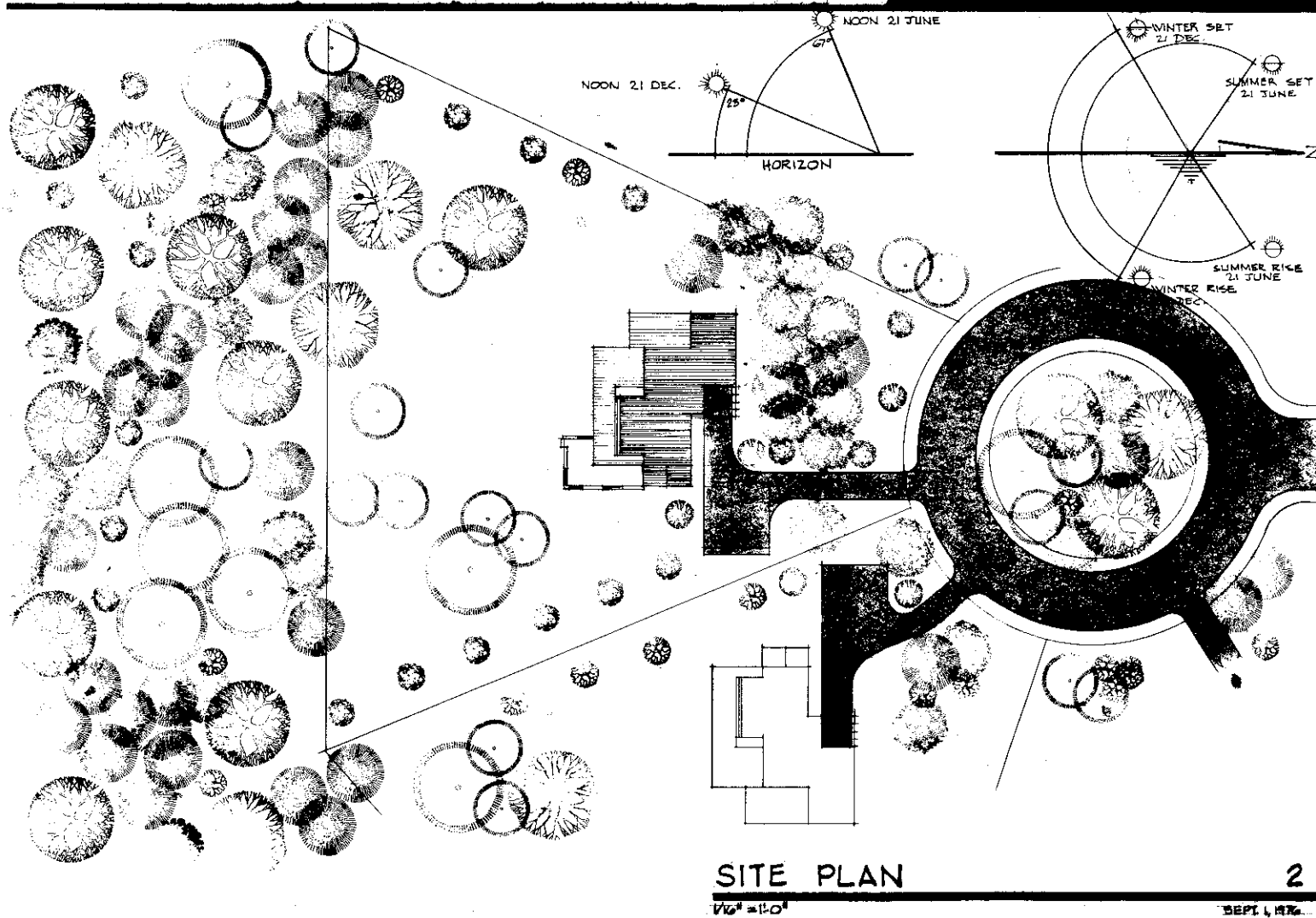
VIEW FROM THE SOUTH



VIEW FROM THE NORTHEAST

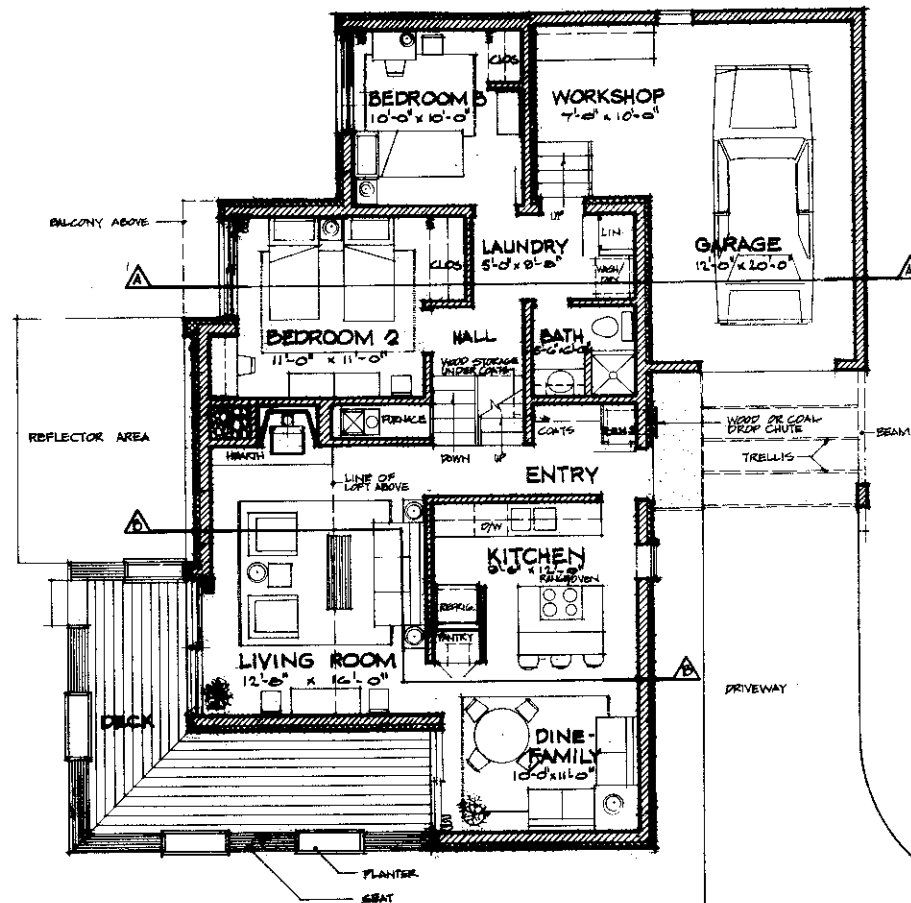
PERSPECTIVES

THE MAINE COMPETITION FOR LOW COST HOUSING



THE MAINE COMPETITION

FOR LOW COST HOUSING



LOWER FLOOR PLAN

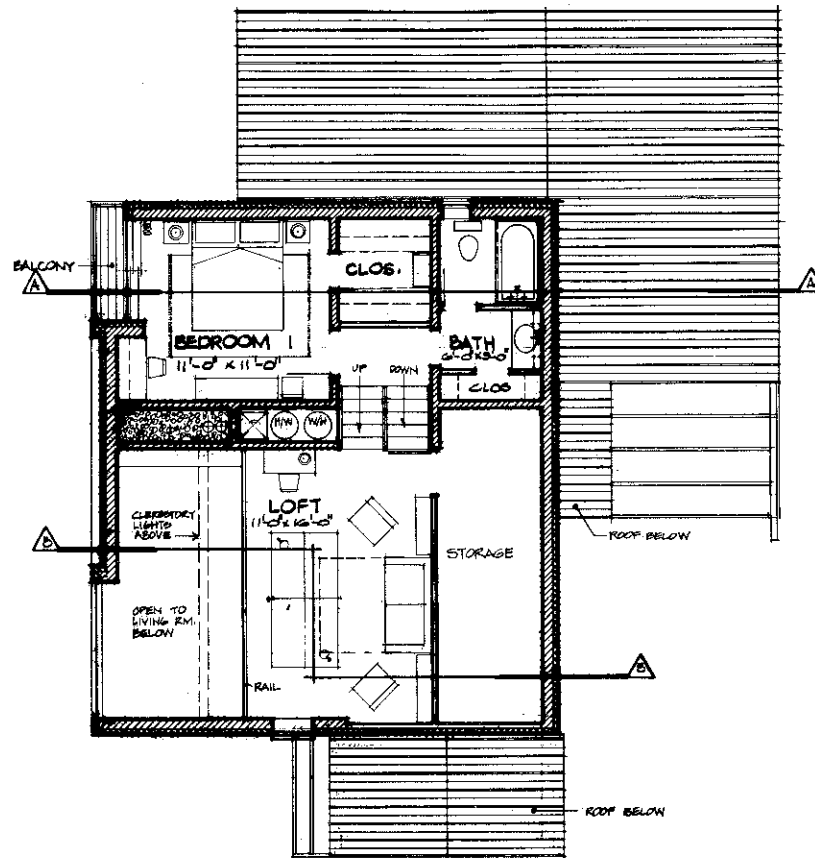
14'-0"

3

SEPT. 1, 1970

THE MAINE COMPETITION

FOR LOW COST HOUSING



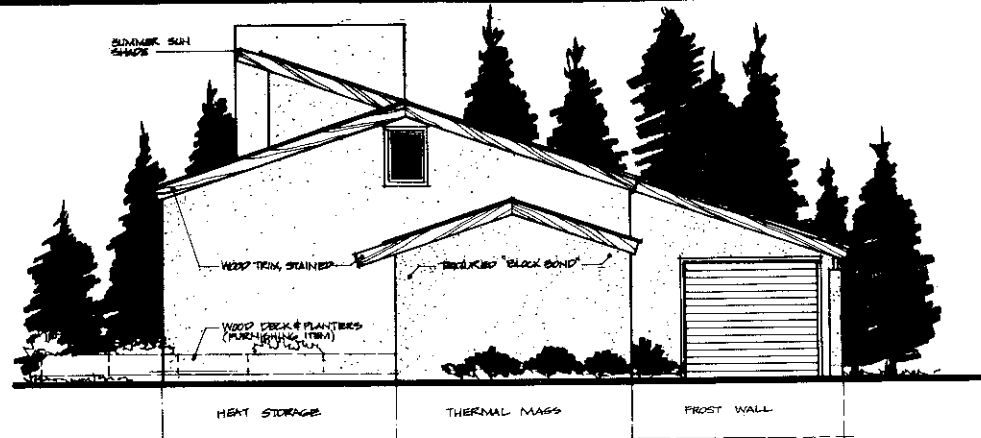
UPPER FLOOR PLAN

1/4" = 1'-0"

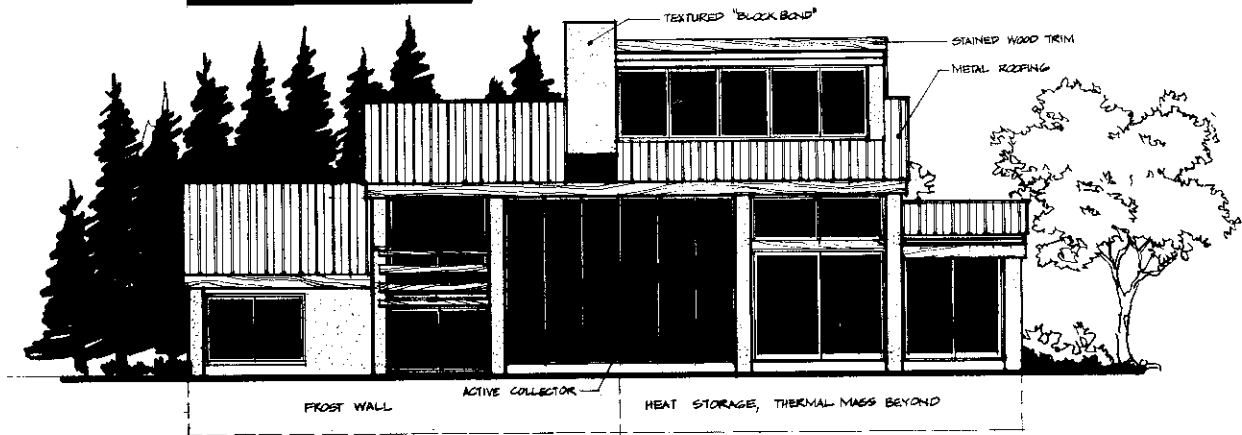
4

SEPT. 1, 1976

THE MAINE COMPETITION FOR LOW COST HOUSING



EAST ELEVATION



SOUTH ELEVATION

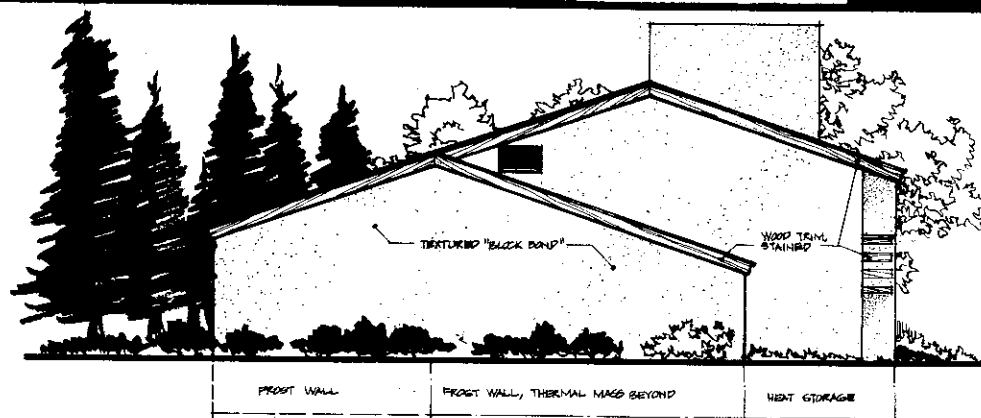
ELEVATIONS

1/4" = 1' 0"

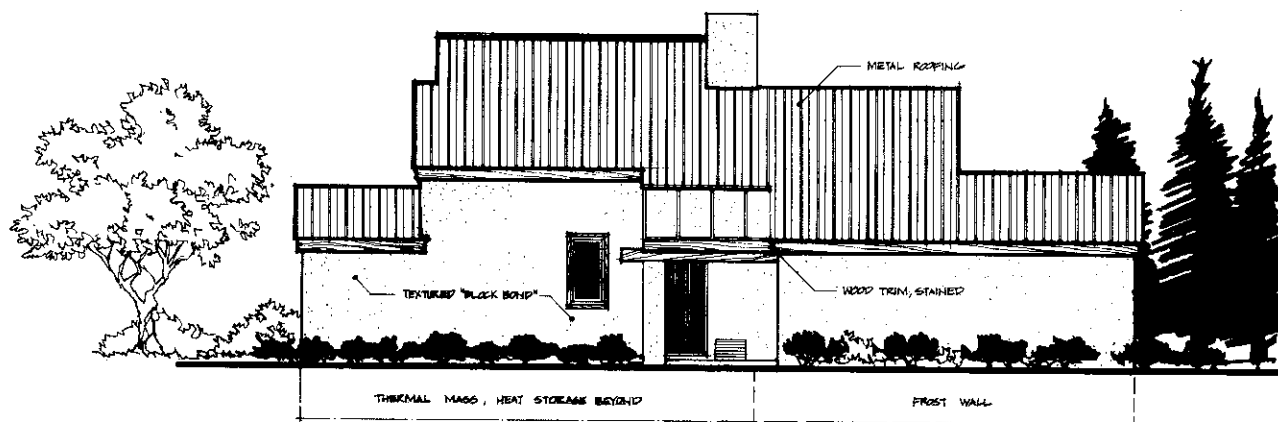
5

SEPT. 1, 1976

THE MAINE COMPETITION FOR LOW COST HOUSING



WEST ELEVATION



NORTH ELEVATION

ELEVATIONS

1/2" = 1'-0"

6

SEPT. 1, 1976

David A. Joy, Architect
RFD 1
Alfred, Maine 04002

Design Concept

The house was designed to express the following design objectives:

Function

In one aspect a house is a machine. The location and relationship of the various spaces which are designed into a house will either 1) perform work for the occupants, or 2) create work for the occupants.

All occupants of houses have certain daily needs which go beyond the obvious needs for a place in which to sleep, eat, recreate, and the like. These additional needs include the provision of adequate storage areas related to the spaces they serve - closets for bedrooms, pantries for kitchens, tool storage for lawn, garden and house care, cupboards for dining room dishes, cupboards for kitchen dishes, utility room for house storage and laundry area for clothes care and storage - provision of a compact and functional floor plan which maintains the proper relationship between spaces and a plan which makes maximum utilization of available space.

Aesthetics

In contrast to its purely functional considerations, a house cannot truly meet the needs of its occupants unless it is responsive to their aesthetic needs, not in the sense of "decoration," rather in the diversity and continuity of spatial arrangements. All houses should have a certain amount of un-adorned sex appeal.

Character

It was decided that the character of the house should incorporate materials and forms reminiscent of the New England idiom. Hence, the house is designed within a modified form of salt box style (which, incidentally, is well suited to a south facing site) and utilizes clapboard siding. Although it was not the objective of this design to simply produce a conventional looking house, it was considered that a conservative approach would have more widespread appeal and be more readily acceptable to potential builders, buyers, brokers, bankers and neighbors.

Construction

The construction techniques needed to construct this house are all standard construction detailing except for the use of extra insulation in the ceiling

and the use of rigid insulation to sheath exterior walls. Conventional construction techniques were chosen over other possible systems in order to ensure that most competent builders would not be prevented from building the house due to special construction techniques unfamiliar to them.

Economy

Economy is achieved through maximum utilization of space and materials. The following are examples of specific measures taken to effect a savings in either capital costs or long range maintenance and operational costs.

No basement: chosen to realize a lower capital cost and to avoid what is normally a cold, dark, wet and somewhat useless space. This house compensates by providing the necessary storage space on the first floor.

Ten inches of roof insulation: chosen because of its compatibility with the structural system, its initial low cost and long term savings.

Rigid insulation/sheathing on exterior walls: chosen because its initial cost is only slightly more than conventional plywood sheathing, is easier to install and results in better wall insulation

and long term saving without having to resort to 2 x 6 in. studding.

Solar Hot Water heater: chosen because it is technically feasible to obtain approximately 50% of hot water needs from a solar collector. High first cost (about \$1,200) but easily amortized by long term savings.

Solar wall: chosen because complete solar heating systems are not practical for this climate and because the low cost, low technology and simplicity of this system make it practical for installation as a passive heat supplement.

Wood frame, stick-built: chosen to enable local contractors and builders to work in a medium with which they are completely familiar and to utilize native Maine resources, namely wood, as much as possible.

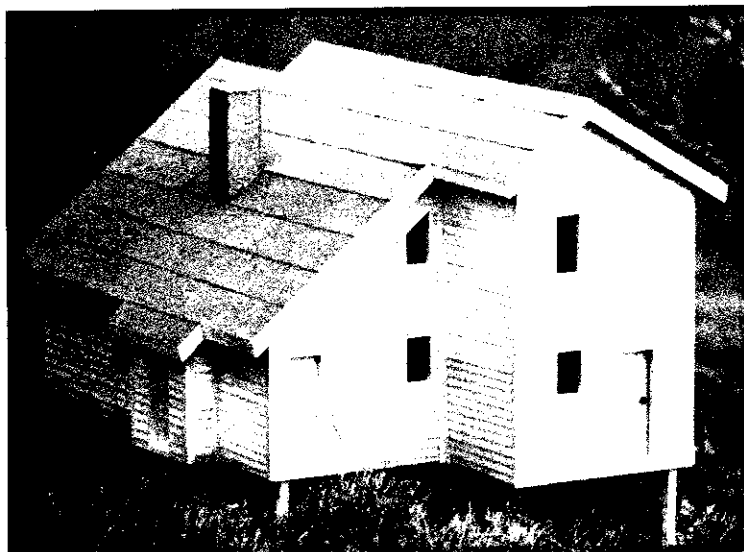
Conclusion

In the final analysis it is mostly impossible to perfectly synthesize all of the desired objectives. This design has attempted to incorporate all of the above mentioned objectives but admits to compromise. Hopefully, potential occupants will be given an opportunity to inject their own brand of compromise into the design and thus resolve some of the pitfalls of a prototype house.

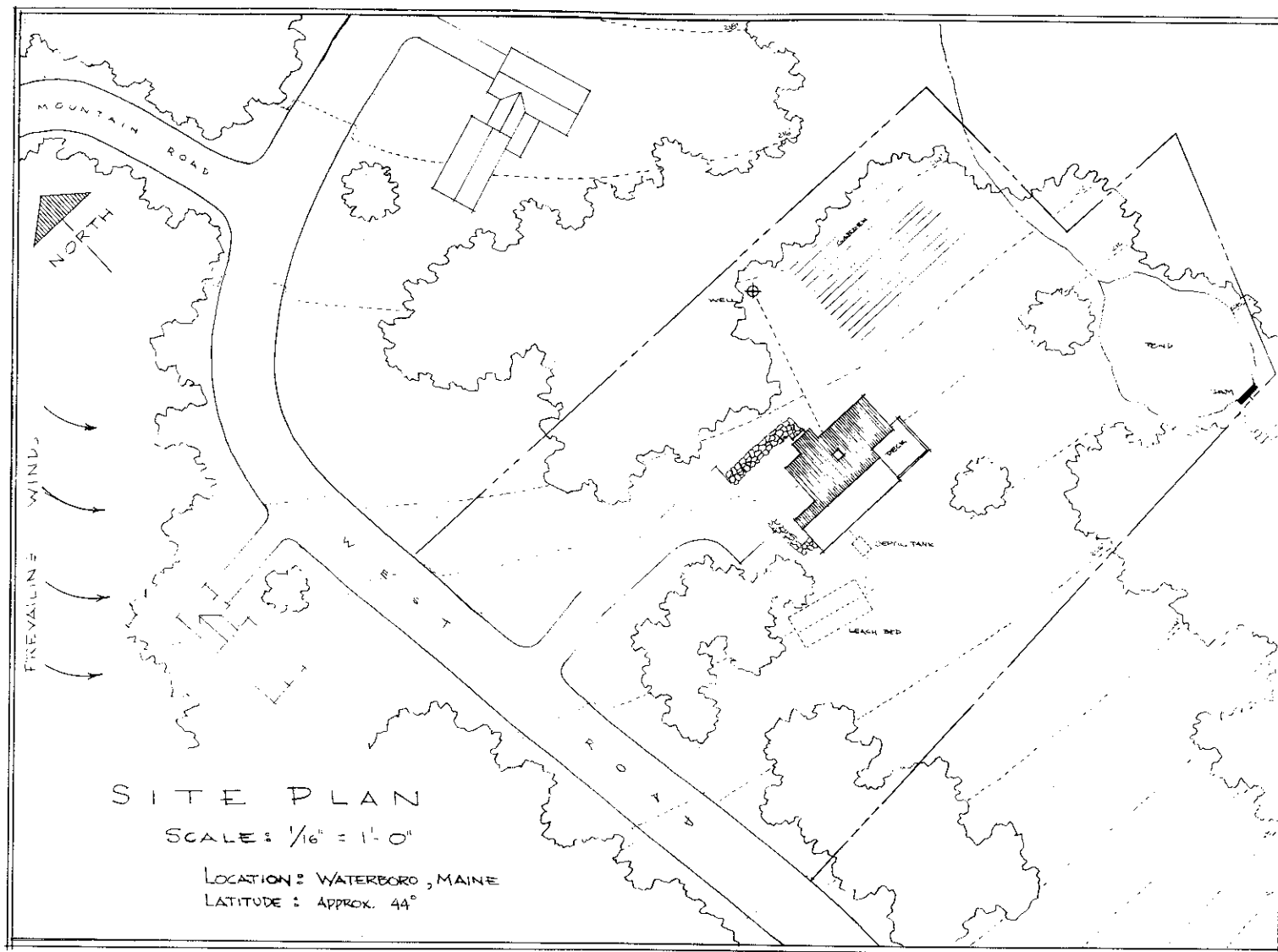
Cost: \$19,000

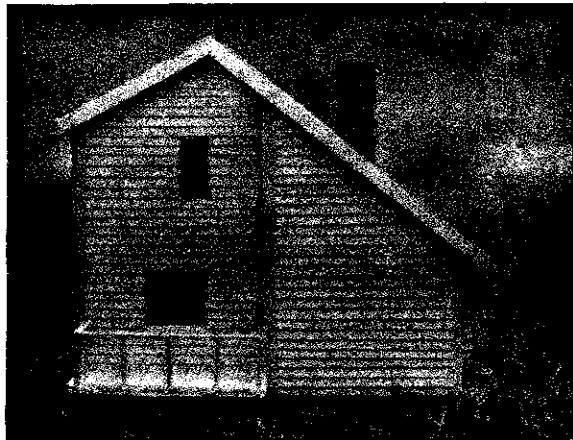
THE MAINE COMPETITION

september 1976

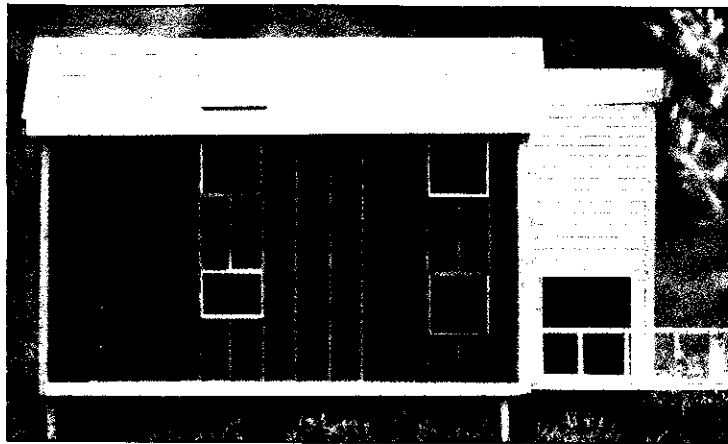


24





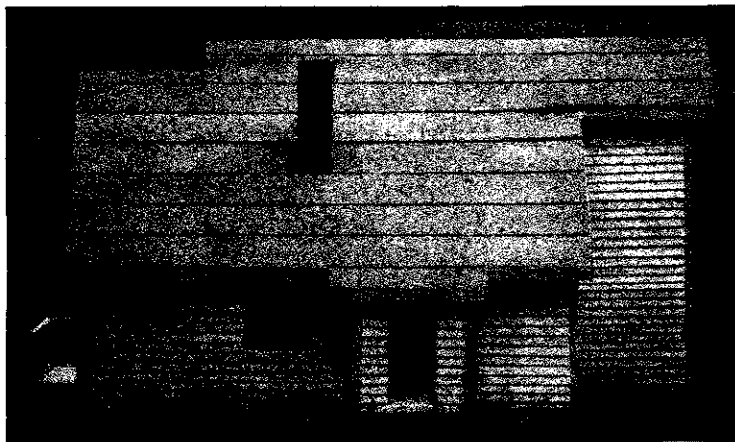
EAST



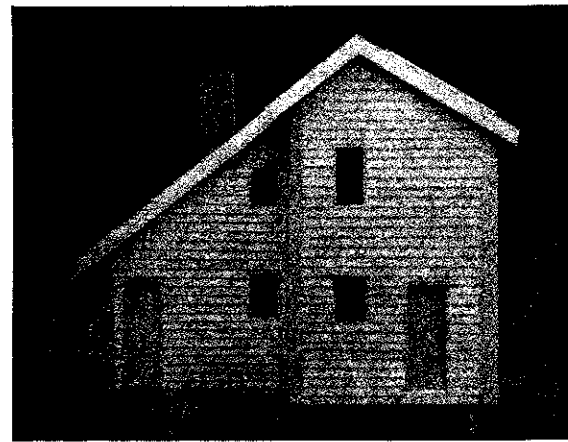
SOUTH

ELEVATIONS

SCALE: $\frac{1}{4}'' = 1'-0''$



NORTH



WEST

SPECIAL MERIT

21 Krumbhaar & Holt, Associated Architects
66 Main Street
Ellsworth, Maine 04605

Design Concept

The Need

For too long wasteful living momentum has continued unexamined. Essentially our homes are unchanged in concept for several centuries. This is despite radical changes in availability of labor, materials, energy, space, etc. Also changed are the way people live and their essential housing needs. This house proposal will consider a more conservative approach with respect to space use, thermal integrity, material use and hence cost.

Space Use

Home spaces are ideal for multiple use. Some cultures do well with a single residential space. Let us assume that at least two well separated spaces would be a minimum for a diversified Maine family to live comfortably. Any real separation is quite rare in present day average houses. Let the separations serve contrasting day activities, early

to sleep versus TV interests and multiple night time privacy.

Let us start by declaring "the single-used" obsolete!! With a bed in a 8' x 12' room you are crowded. An 8' x 12' mattress room by comparison would be immense because of its many possibilities! Likewise, sleeping on the TV couch can be most luxurious. Day or night spaces must become day and night spaces with appropriate character. Complete utilization of space is essential to a truly conservative home.

Thermal Integrity

The shape that encloses the most space for the least exterior surface and hence heat loss is a sphere. By contrast the least space is enclosed by an elongated triangle or a tetrahedron. The ideal, then, would be a near-sphere for each major unit.

Heating and cooling without use of fossil fuel is important. Glass used for passive heat does not need to be larger than the needs of the space served. Location of windows to "follow the sun" from different angles provide better distribution for longer periods.

Ample insulation, minimum regular openings, and insulated panels to cover major solar glass and off-duty ventilation complete the proposal.

To supplement solar heat, a small wood stove gravity system is provided with simple return duct. A warm air oil furnace can easily be substituted where preferable. Use of a small "attic" fan can provide positive ventilation.

Material Use

The Home is enclosed with 8 x 8 square and triangular panels. It uses 2 x 6 framing throughout at 2'-0" centers with full insulation. Windows generally are fixed with insulated closure, with glass framed directly to the studs. Screened waterproof metal louvers have similar closure. Tensil ties are used for their high efficiency. Furnishings can be very easily built in. Materials are first quality in stock sizes.

Cost

A basic heat loss of about 10,000 btu/hr partially satisfied by the sun will provide a minimum heating cost. Natural materials should not require finishing.

With about 20% more volume than a cube of equal periphery and about 50% more than an equal surface 2:1 rectangular solid, significant first cost savings are possible. Manageable panels of uniform size are to be made of stock easily available material without waste. A foundation

trench wall of 18 lineal feet should also be economical. Finally, by multiple use of spaces for day and night, much less than the usual area is needed. This allows a wide diversity of needs and activities in a very much smaller, easier to maintain house.

Flexibility

This home can be located on any 10' x 10' somewhat level area or larger on which it is legal to build a house. It can be on a city plot, suburban or rural, in woods or a field. Steps or a bridge can aid a flat site. A ledge condition would be an asset. With an open field site plantings should be started. Each of the three basic spaces is adaptable to a variety of uses. With capacity for nine sleeping spots, our assumed five-person family has many options. To buy the "shell" with completion to fit the individual's actual needs would be best. With minor adaptation, two or more units can be grouped or built together. Finally, because of the panel construction, it should be possible to demount, move and reassemble.

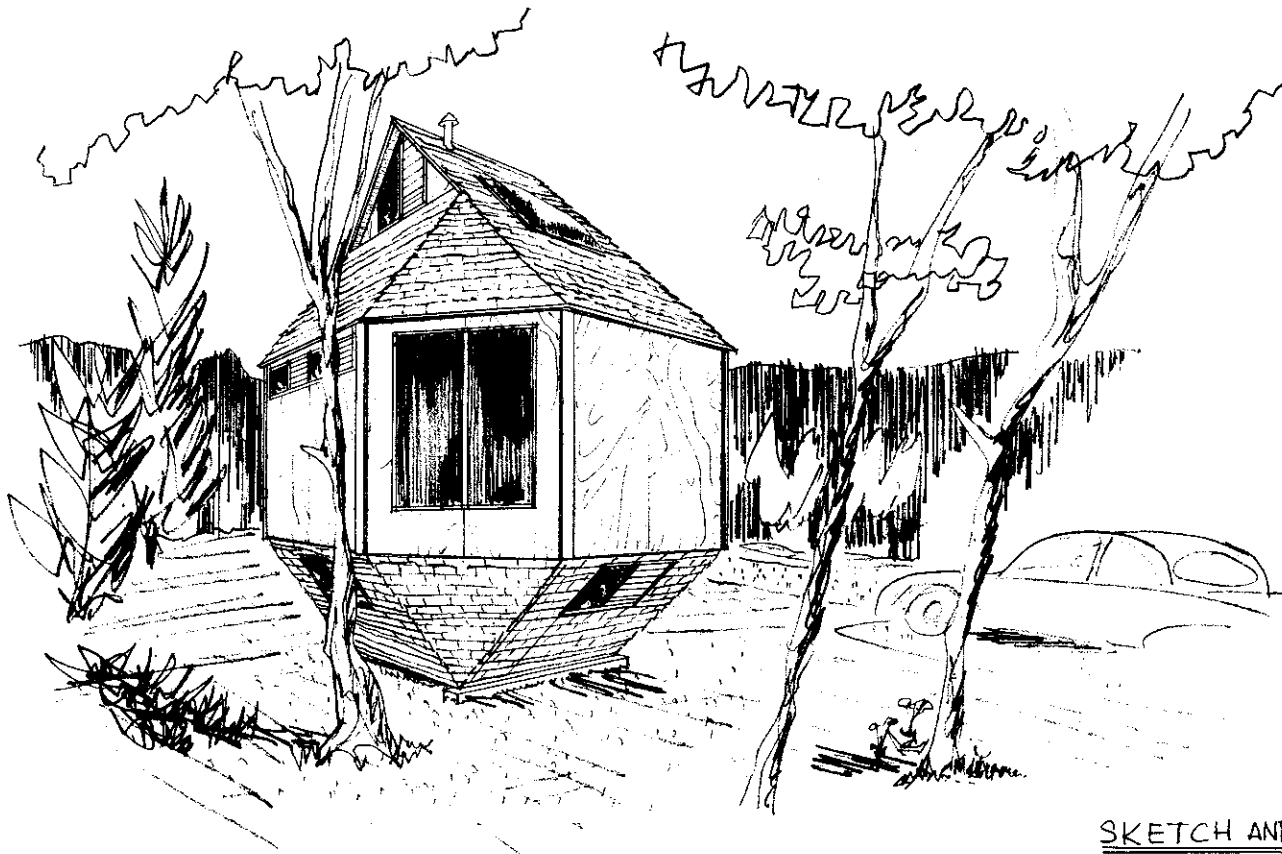
Social Context

Attempting to deal with new housing opportunities, the 2 by 6 x 8 Home should not be a "poor man's house." Its efficiency, versatility and ease of care

hopefully can appeal to a broad spectrum of people, especially kids. For the "together" family, the major activity space related to the kitchen has almost 300 sq. ft. and plenty of sun. The project or craft orientation could work equally. The lower level can be a rousing party area, and the upper level can be completely open or divided into up to four separate spaces. It will not appeal to everyone or the self-conscious. But as its practicality becomes known, it should have a broad appeal.

Cost: \$13,000

THE 2 BY 6 TIMES 8 ^{FT.²} HOME *



SCHEMATICS SCHEDULE OF DRAWINGS

1. SKETCH & TITLE
2. SECTIONS
3. PLANS & ELEVATIONS
4. MISCELLANEOUS DETAILS
 - SITE PLAN
 - FRAMING PLANS
 - ERECTION SEQUENCE
 - SPECIAL DETAILS

MAJOR CONCEPTS

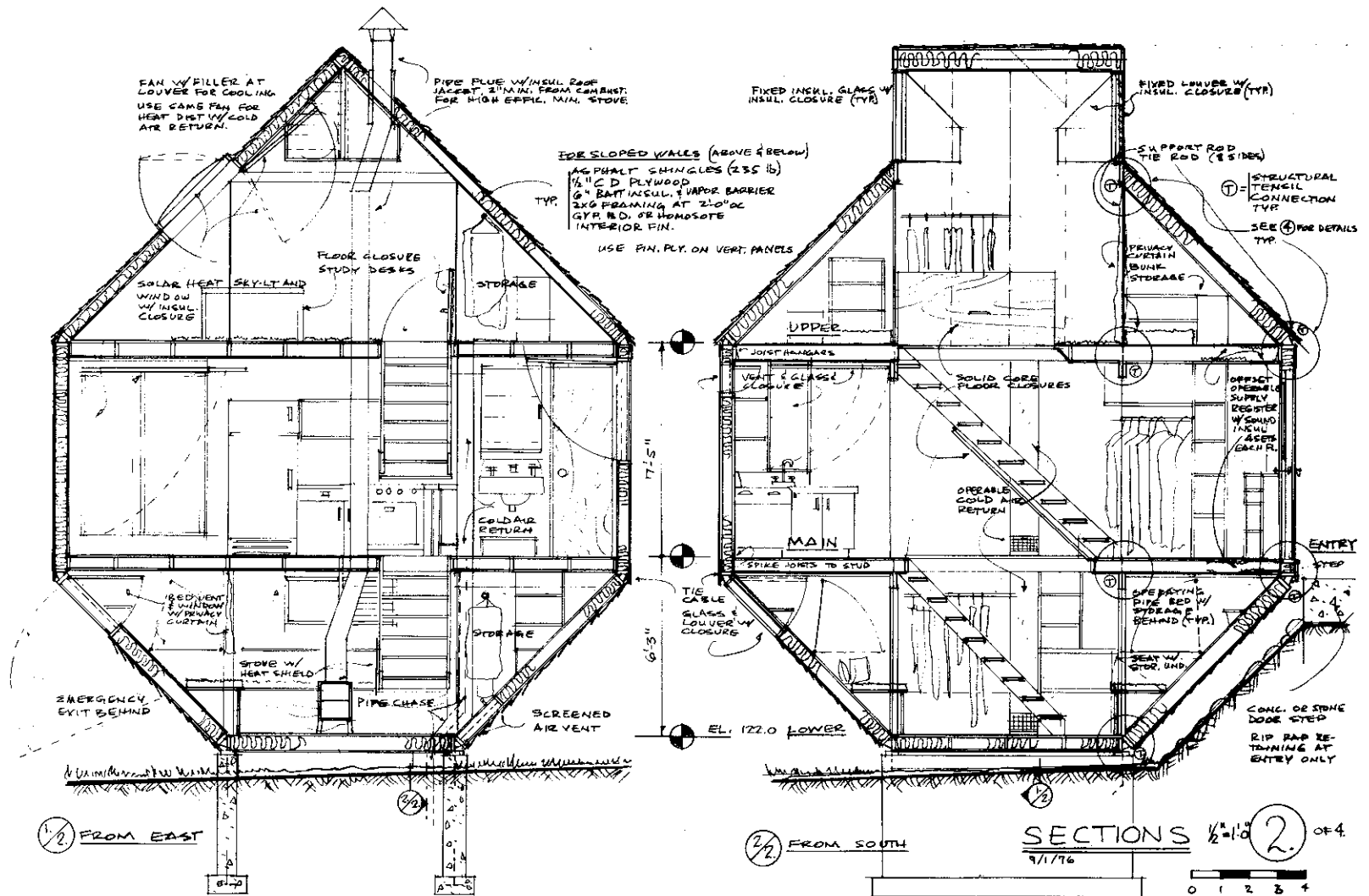
1. THE LEAST PERIPHERY
2. THOROUGH INSULATION
3. SUN & WOOD HEAT
4. MULTI-USE LIVING W/ THREE PRIVACY SPACES
5. SIMPLE, UNIFORM CONSTRUCT.
6. LOWER FIRST & OPERATING COSTS
7. NATIVE MATERIALS

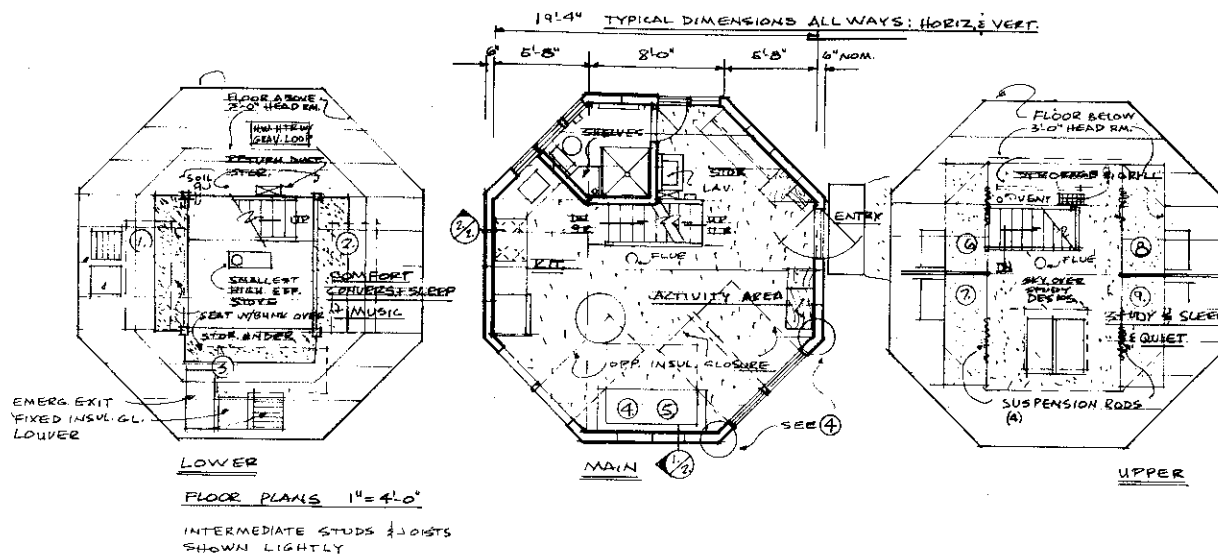
SKETCH AND TITLE
NO SCALE 9/1/76

① OF 4

* ALL FRAMING=2x6, FOR INSULATION & ECONOMY; BASIC PANELS=8'x8' SQUARE, OR 8'x8'x8' TRIANGLE

21





AREAS

LOWER 170 S.F.

MAIN 349 S.F.

UPPER 162 S.F.

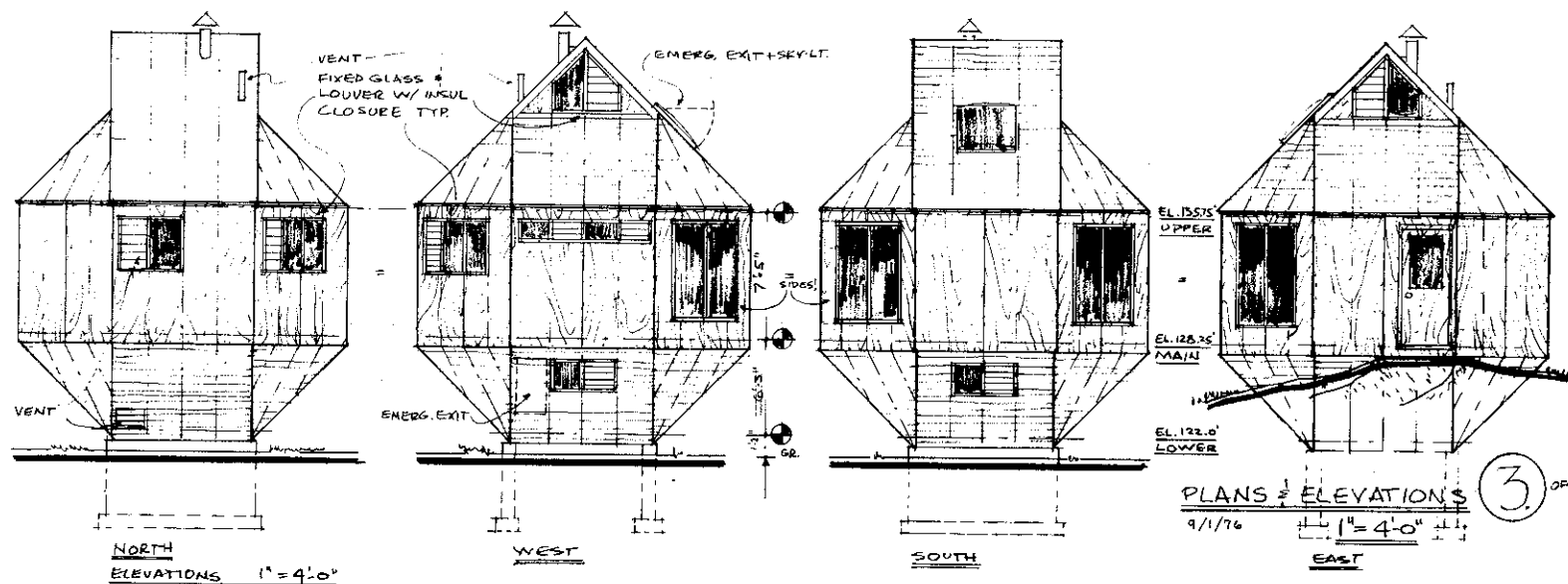
TOTAL 681 S.F.

UPPER & LOWER @ 3'-0" OR MORE CLEAR

MAIN FLOOR TO OUT. SIDE OF EXT. WALL

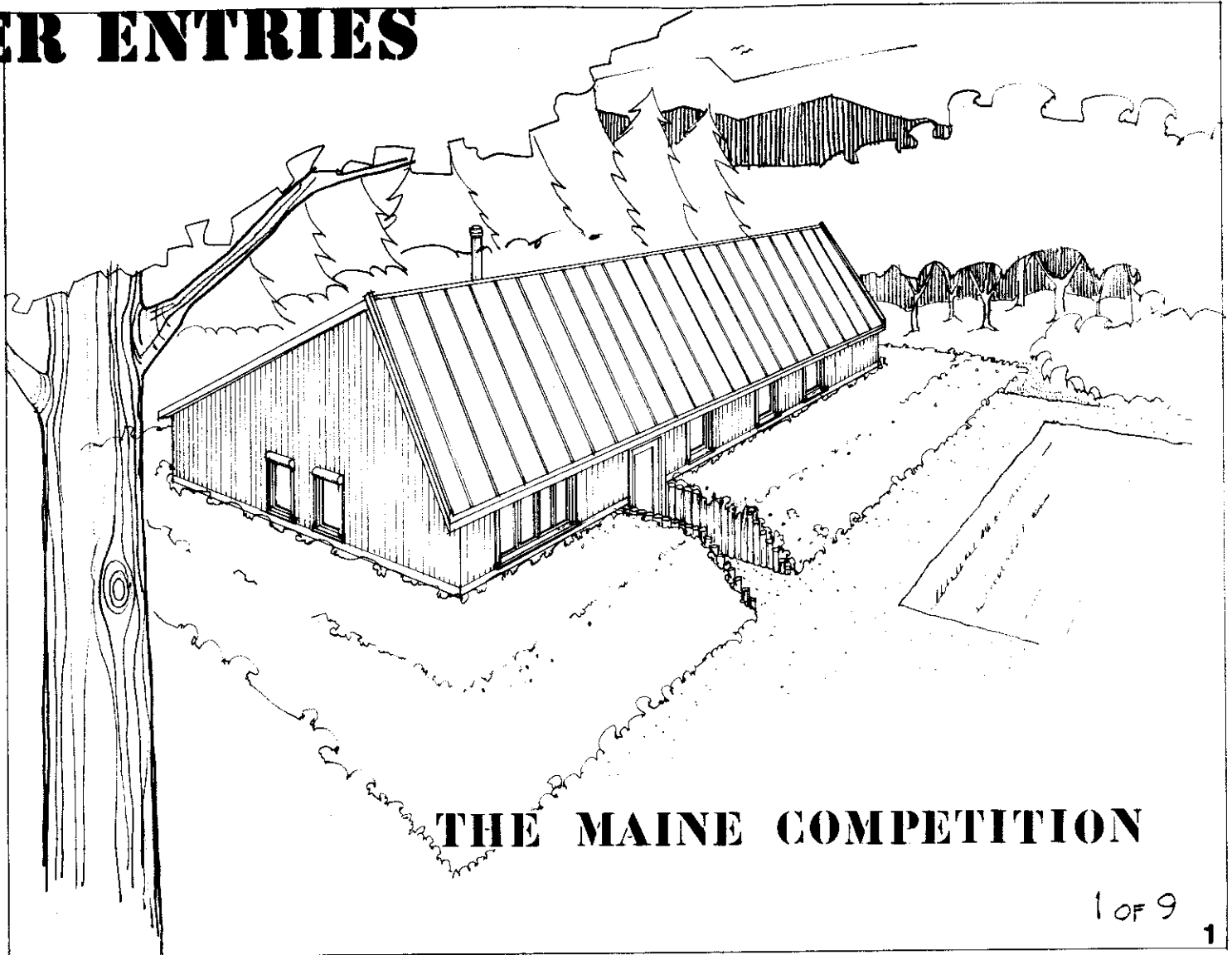
SLEEPING CAPACITY 9

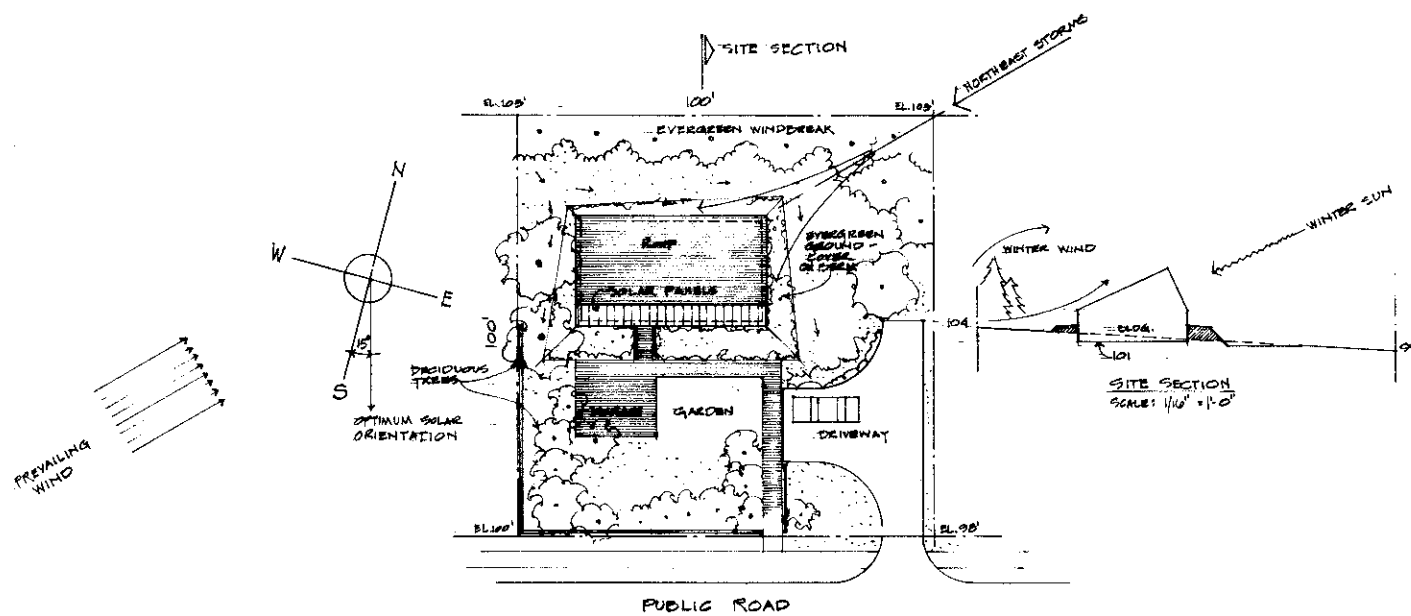
SEPARATE DAY SPACE = 3



OTHER ENTRIES

1



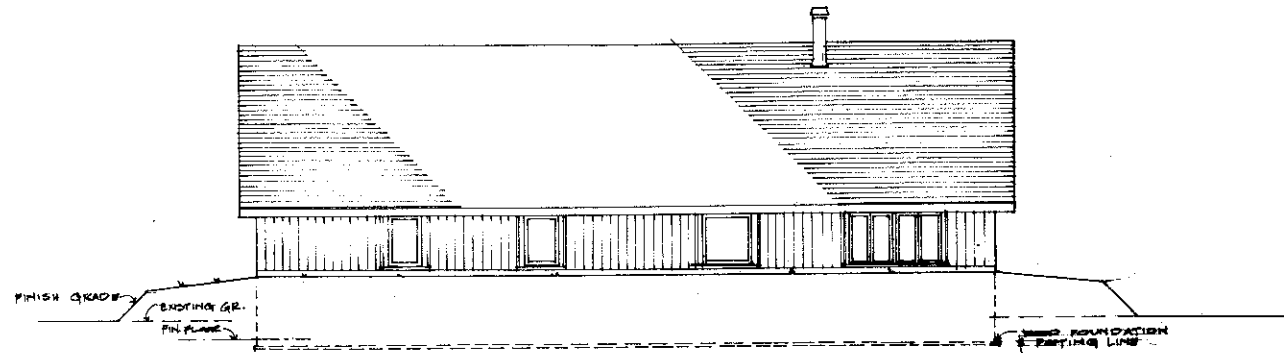


SITE PLAN

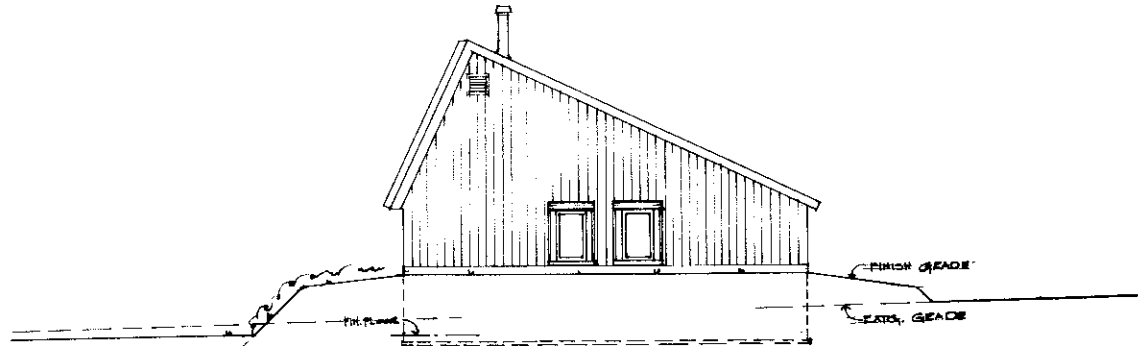
SCALE: 1/16" = 1'-0"

NOTE: FIN. PL. ELEV. = 101.0'

2 of 9

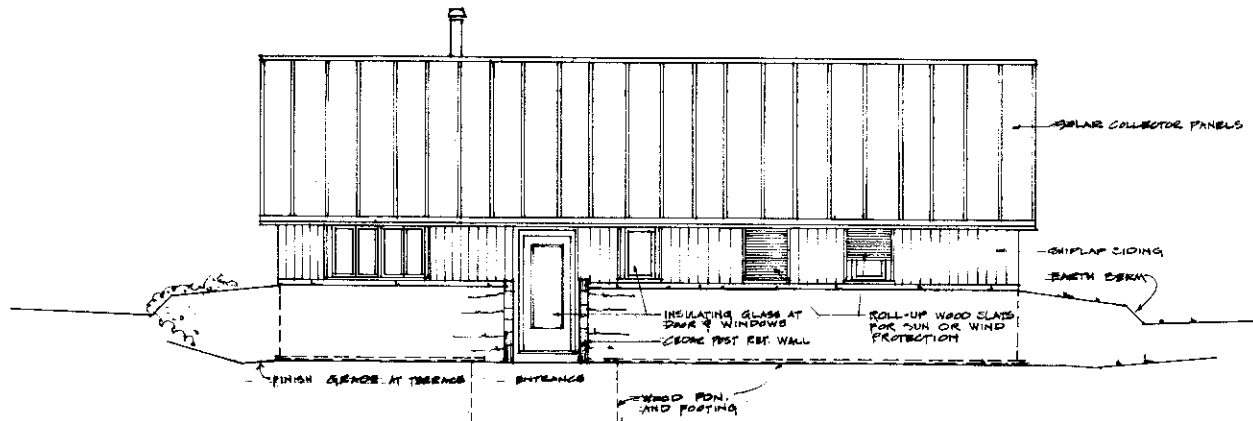


NORTH ELEVATION
SCALE: 1/4" = 1'-0"



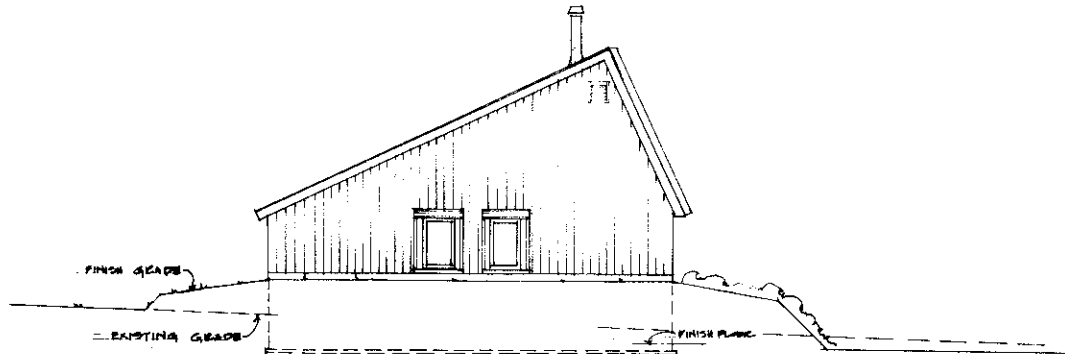
EAST ELEVATION
SCALE: 1/4" = 1'-0"

4 of 9



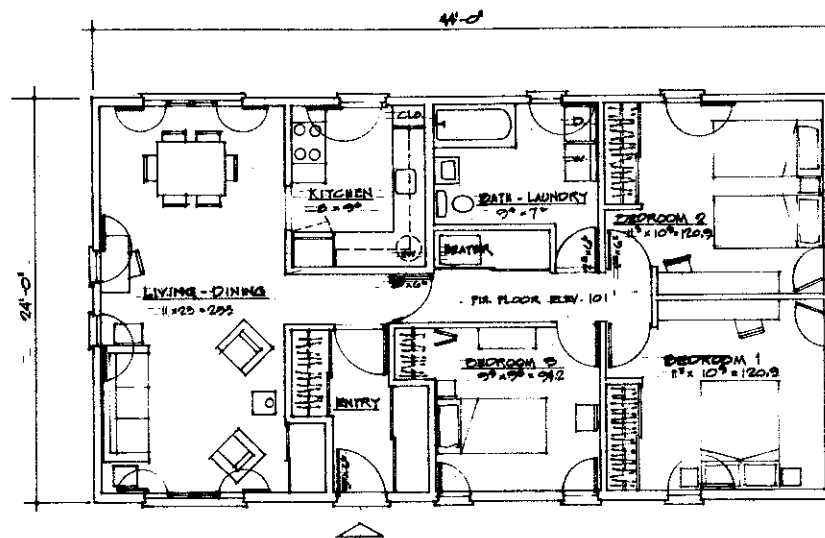
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

NOTE: FOR SITES WITH NORTH ACCESS,
ROOF TRUSSES MAY BE REVERSED
TO ACCOMMODATE SOLAR PANELS
ON SOUTH SIDE.



WEST ELEVATION
SCALE: 1/4" = 1'-0"

5 of 9



FLOOR PLAN
SCALE: 1/4" = 1'-0"

Equation 1: $1/H^2 = 1 - \alpha^2$

3 of 9

A HOUSE FOR A FAMILY OF SIX

SUBMITTED TO THE MAINE COMPETITION
AUGUST, 1976

Designed by

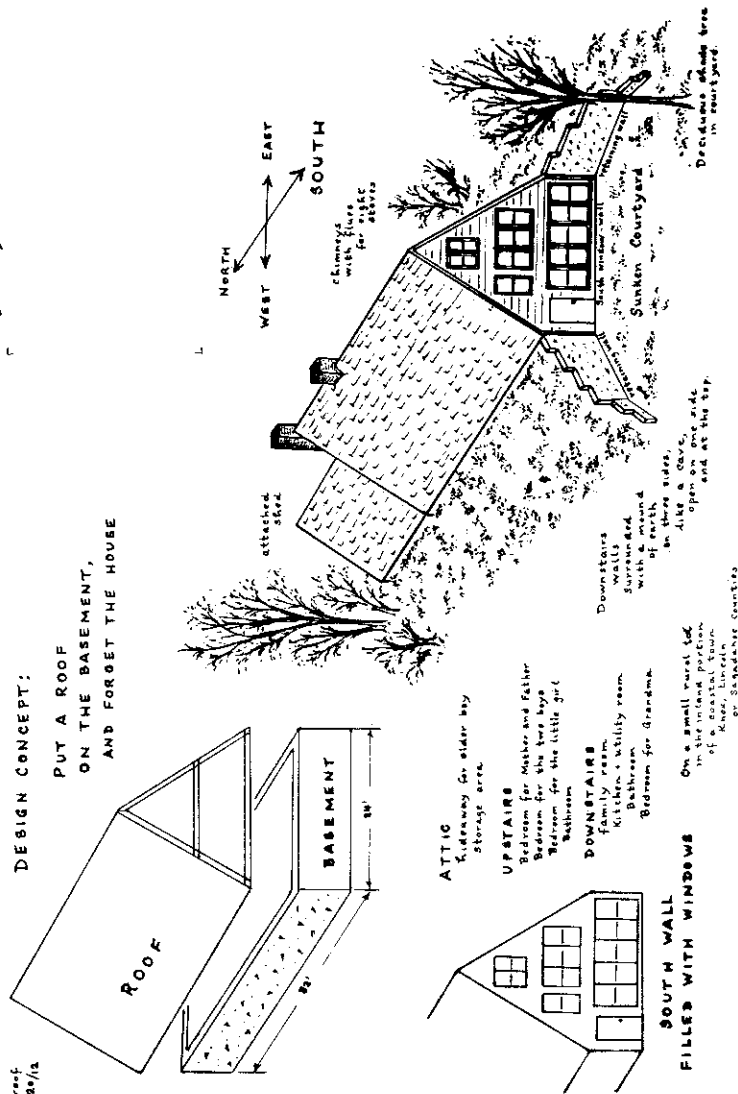


TABLE OF PLATES

- SIMPLE HOUSE**
1. Floor Plans
 2. South Elevation
 3. North Elevation
 4. Elevations, west and east
 5. Construction diagrams
 6. Adaptations of house to environment

- APPENDIX - COMPLEXITIES & VARIATIONS**
7. A range of houses with interchangeable components, to be mass produced - put in a development
 8. Some floor plans for the different houses
 9. A drawing showing how the different houses might be clustered together in a development

In the accompanying Commentary, the discussion of Variations and complexities, which is properly the topic of an appendix, has been incorporated into the discussion of the original Simple House.

In the sections on Climate and Site, much of which ought to be in an appendix, the remarks which pertain to the Simple House designed for the family of six, are distinguished from the rest by lines in the margin.

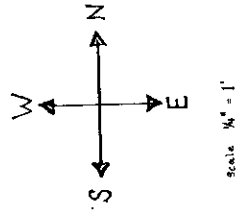
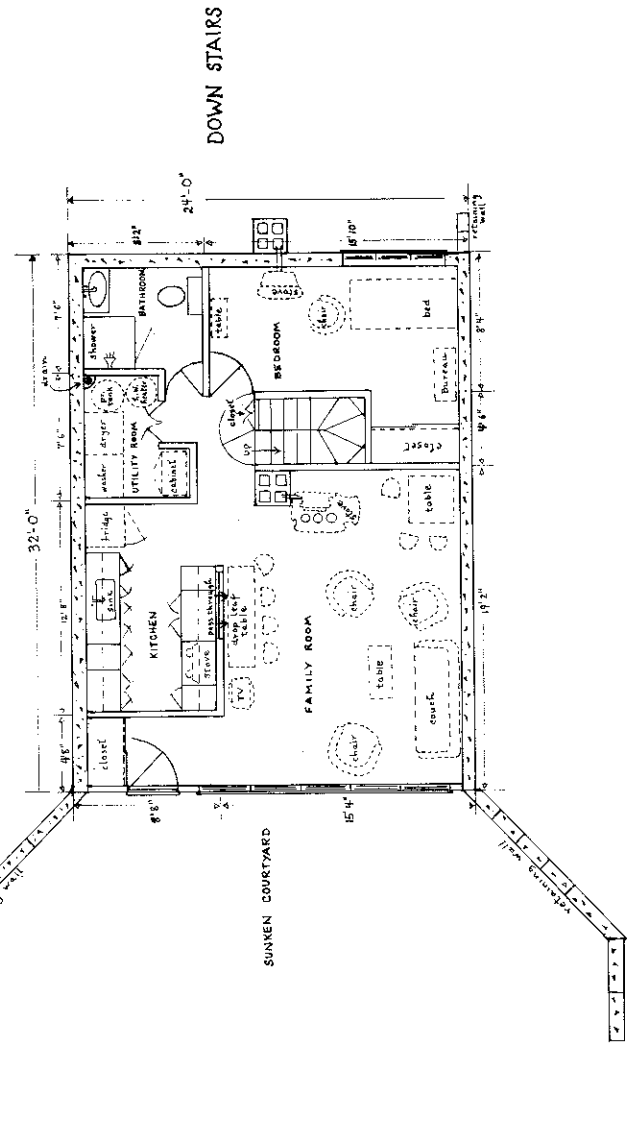
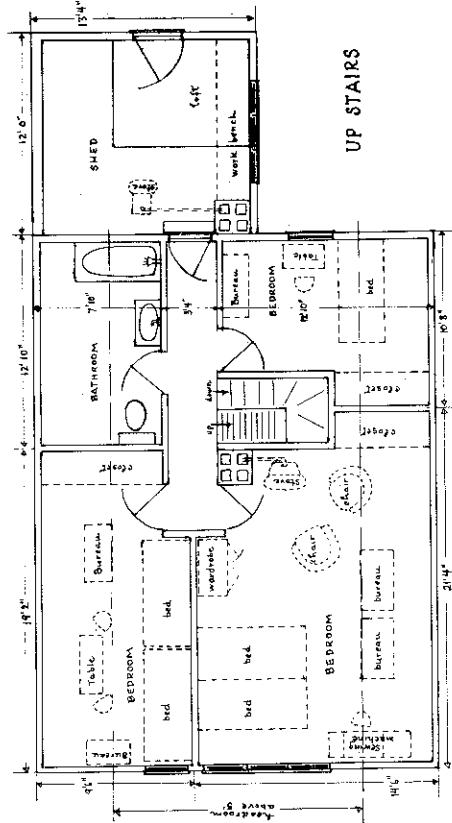
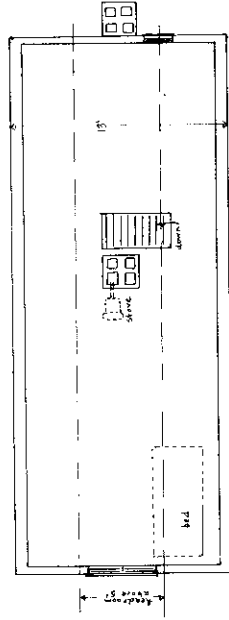
WRITTEN COMMENTARY

TABLE OF CONTENTS

CHAPTER 1	CHAPTER 4
Design Concept, Page 1	Use of space within the house
Description of the House, Page 1	Accessible and useful spaces, Page 26
	Convenient and efficient spaces, 29
	Adaptable spaces, 29
	Changing the house during the design stage, 31
CHAPTER 2, Adapting the house to suit the Maine Climate	CHAPTER 5
The Uses of Sunlight, Page 2	The family that lives in the house
Protection against cold, 3	Grandma, Page 39
Protection against wind, 8	The Wife, 34
Protection against ice & snow, 9	The Husband, 35
Protection against rain, 12	The Little Girl, 36
	The Older Boy, 36
	The Little Boy, 37
	The Family, 38
CHAPTER 3, Adapting House to Site	CHAPTER 6, Cost
Location, 14	Economics of size, 41
Character of the site, 14	Using less materials, 43
Size and layout of the lot, 16	Cheap and abundant materials, 46
Adapting the house to the topography of the site, 18	Substitution of materials, 47
Landscaping, 21	Efficient use of labor - mass production, 47
Recycling Destroyed Land, 24	Leisure, 50

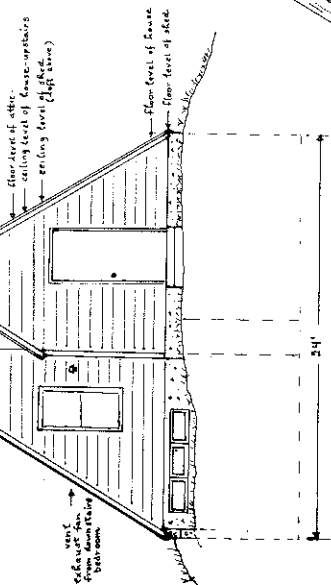
A SIMPLE HOUSE
designed for a family of six
a detached dwelling
located in a small rural lot

Plate 1.
floor plans

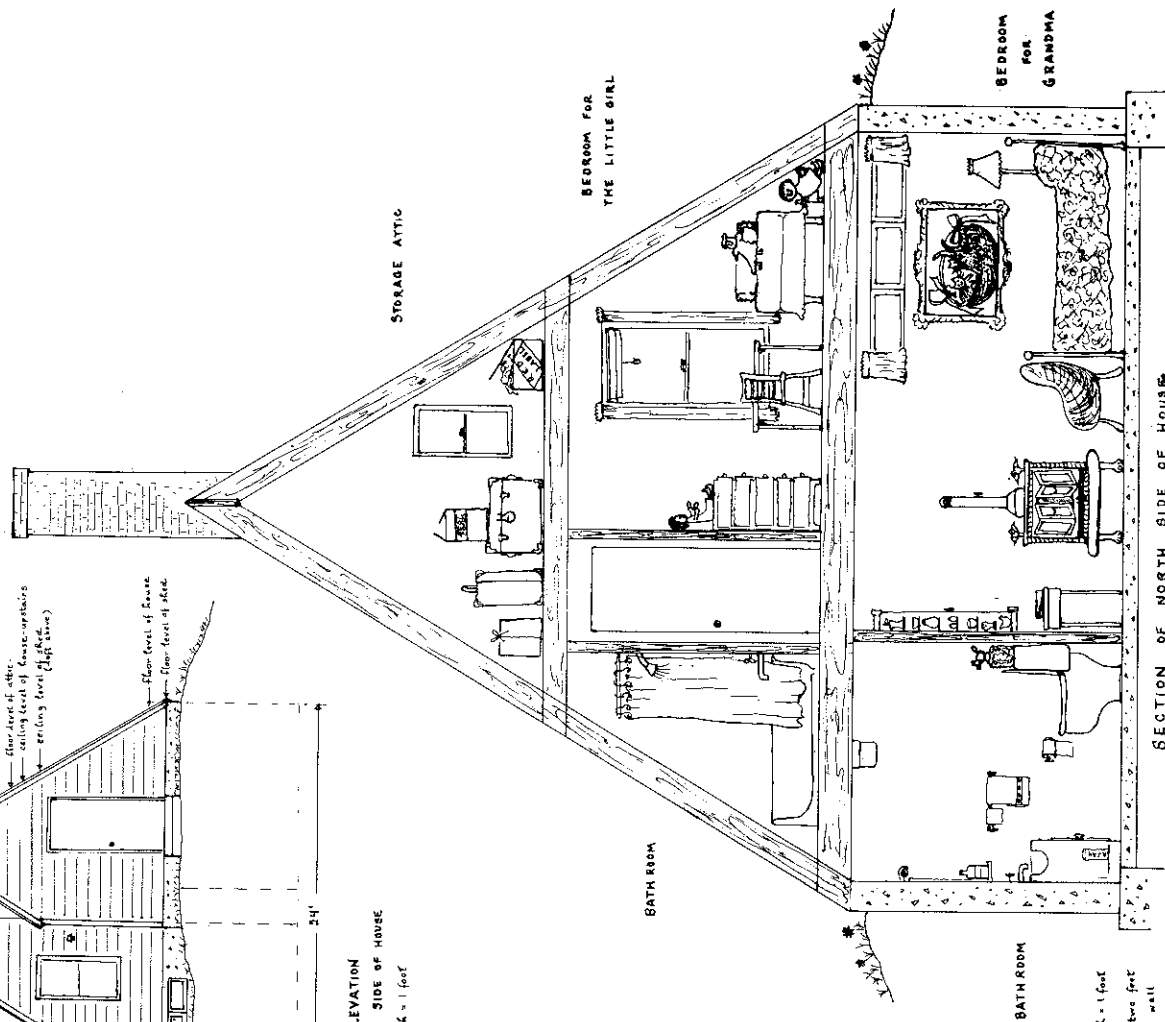


A SIMPLE HOUSE

designed for a family of six
detached dwelling
located on a small rural lot



ELEVATION
NORTH SIDE OF HOUSE
Scale 1/4 inch = 1 foot

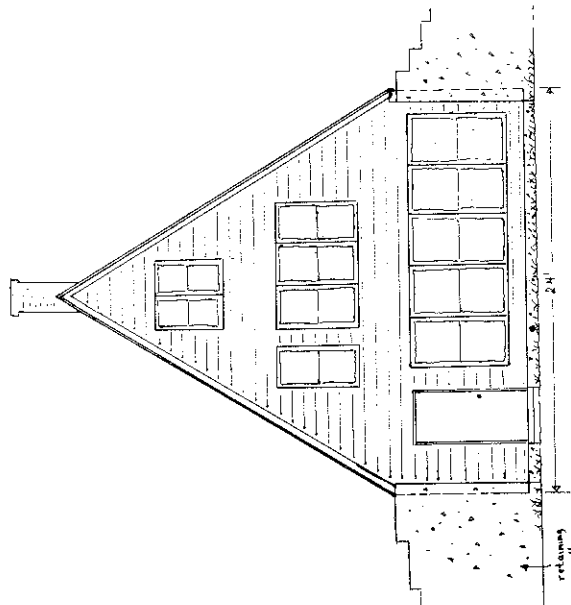


SECTION OF NORTH SIDE OF HOUSE
SHOWING ROOMS FURNISHED FOR HYPOTHETICAL FAMILY

Scale $\frac{1}{2}$ inch = 1 foot
Section about two feet
from north wall

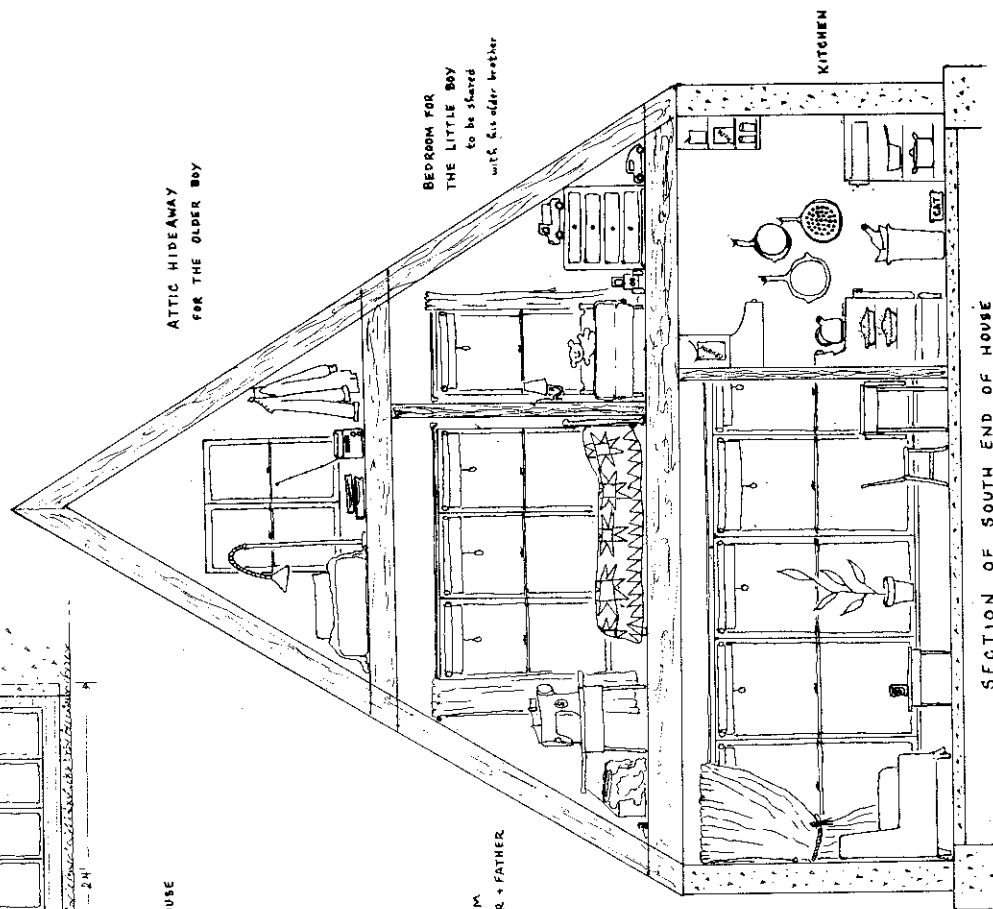
Plate 2
Elevation - south

A SIMPLE HOUSE
designed for a family of six
detached dwelling
located on a small rural lot

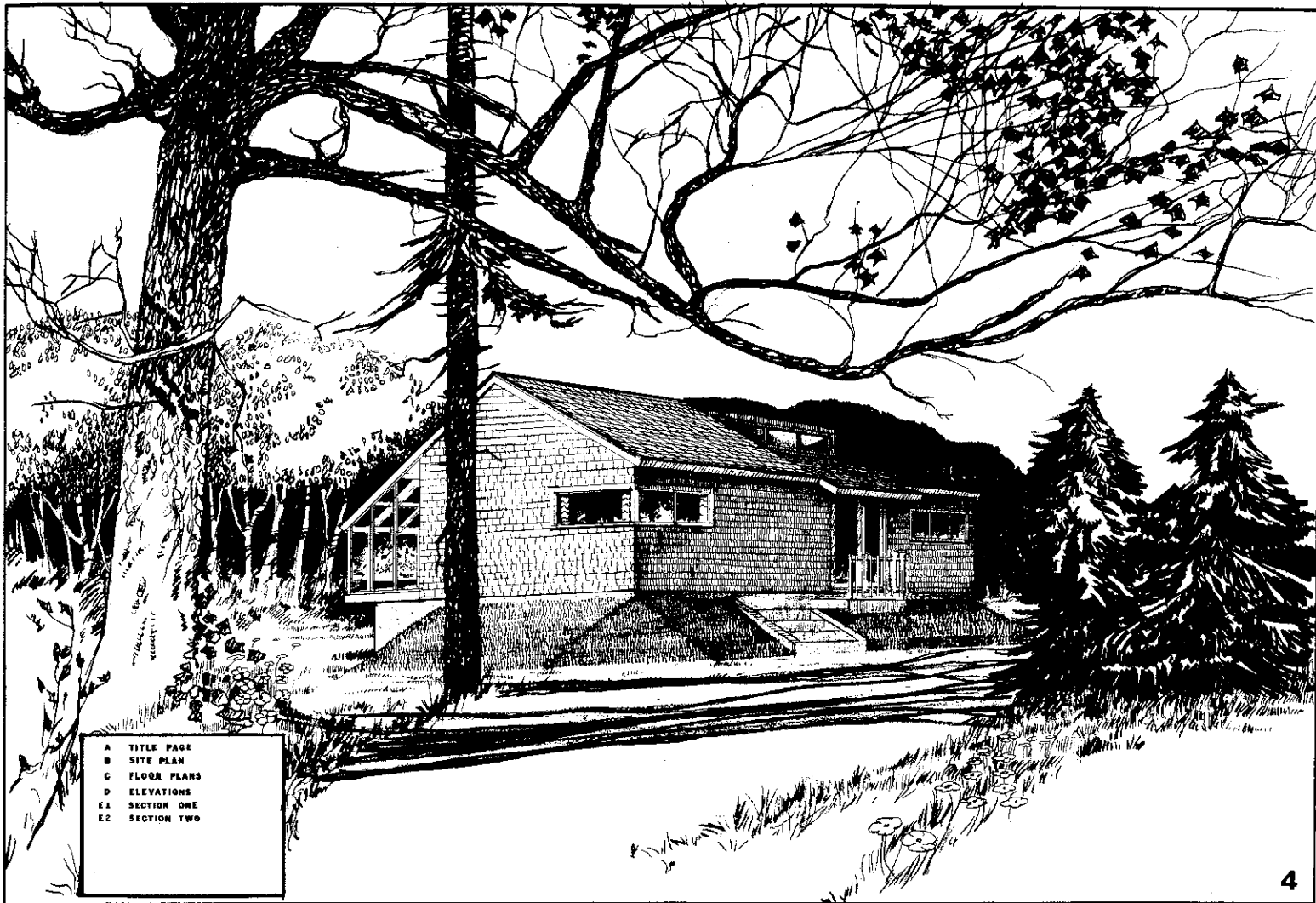


ELEVATION
SOUTH SIDE OF HOUSE

Scale 1/8 inch = 1 foot



Scale 1/8 inch = 1 foot
Section about 6 feet from south wall



A TITLE PAGE
B SITE PLAN
C FLOOR PLANS
D ELEVATIONS
E1 SECTION ONE
E2 SECTION TWO

4

TITLE PG.

scale:

date:

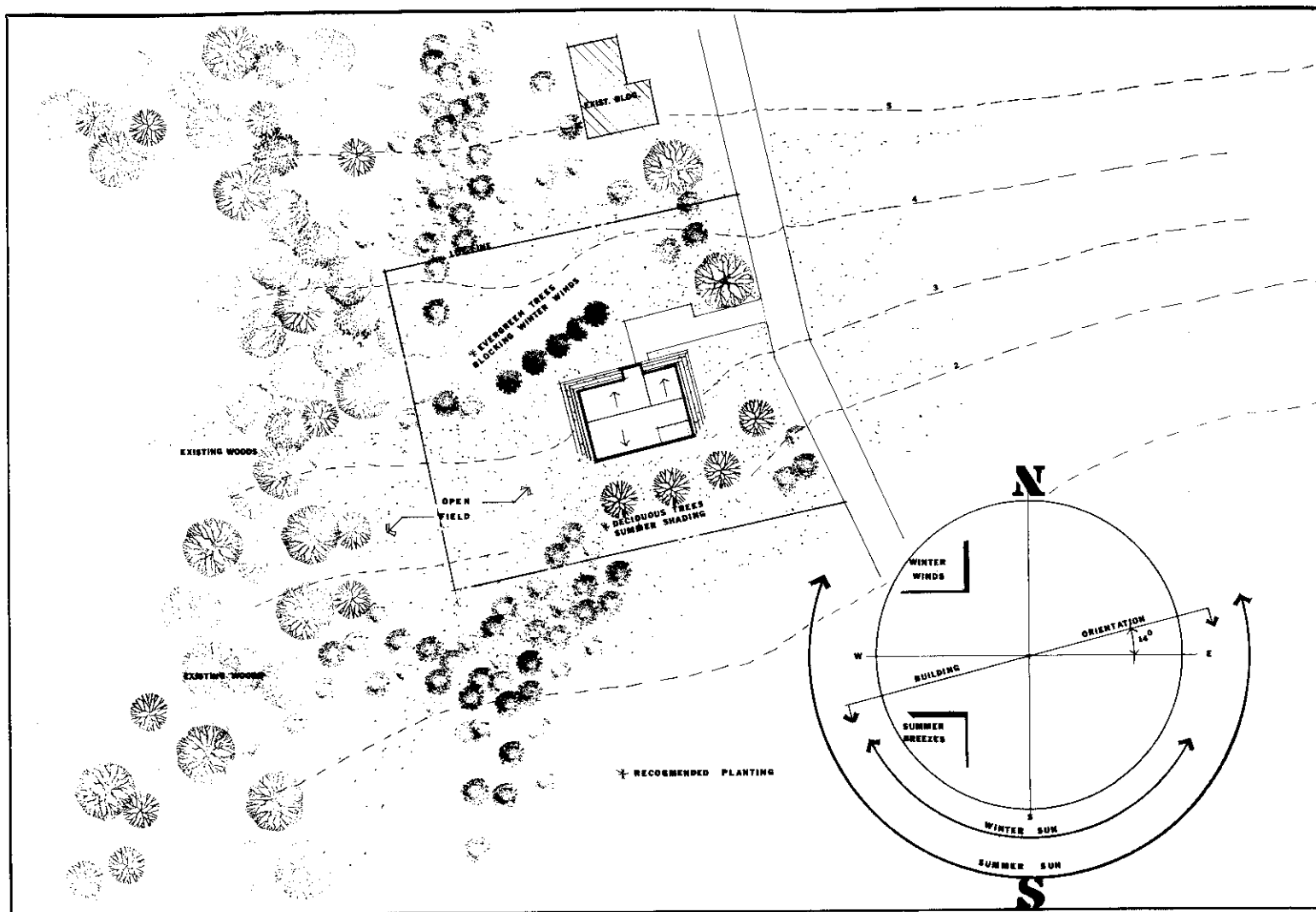
designer ☐
engineer ☐
drawn by ☐
traced by ☐
checked by ☐

PERSPECTIVE OF NORTHEAST VIEW
OF DWELLING

revisions:

sheet no.

A



SITE

scale: 1/4" = 1'-0"

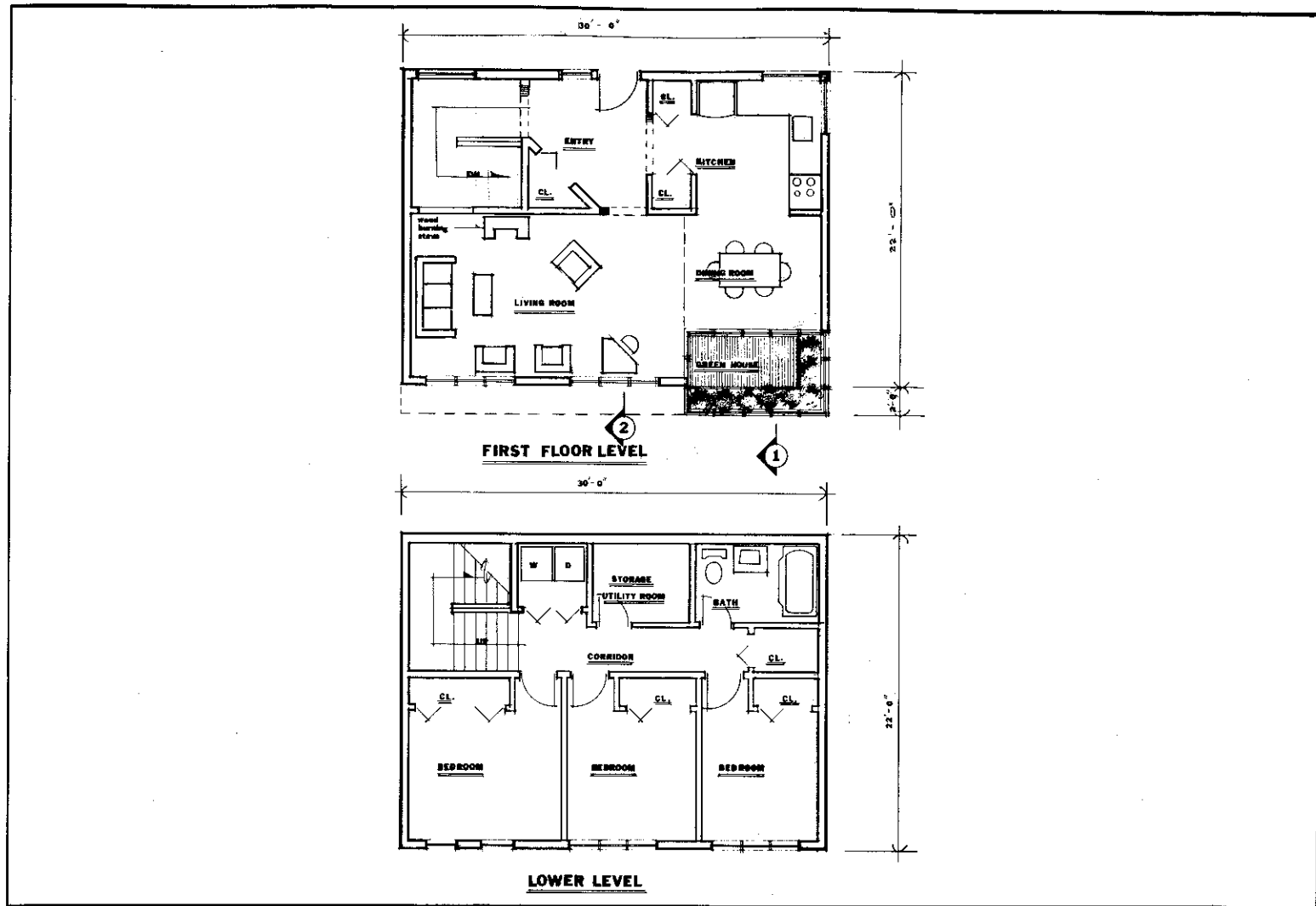
date:

designer: ☐
engineer: ☐
drawn by: ☐
traced by: ☐
checked by: ☐

revisions:

sheet no.

B



FL. PLANS
 scale: 1/4" = 1'-0" date:

designer:
 engineer:
 drawn by:
 traced by:
 checked by:

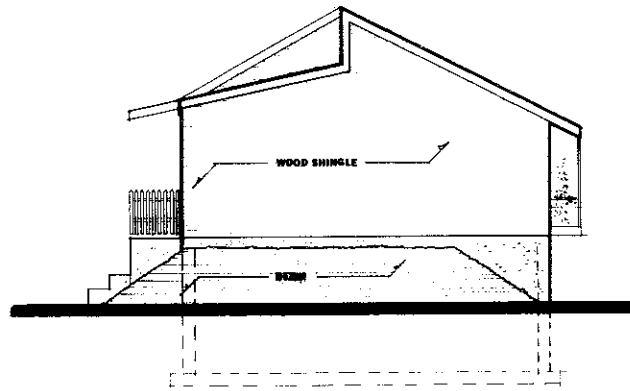
--

revisions:

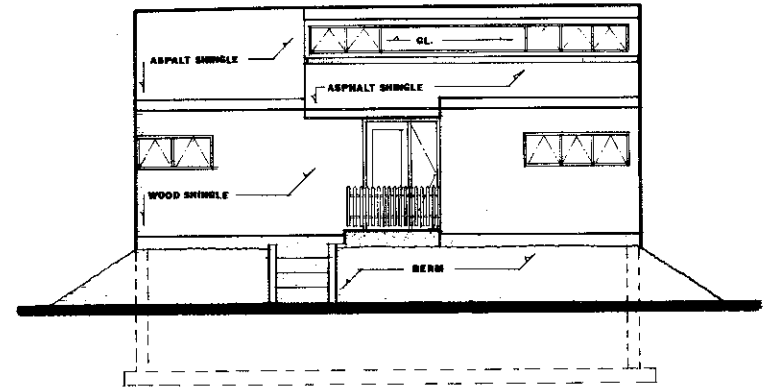
DATE

sheet no.

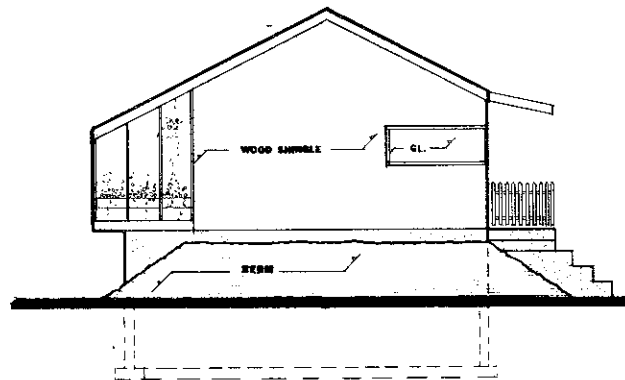
C



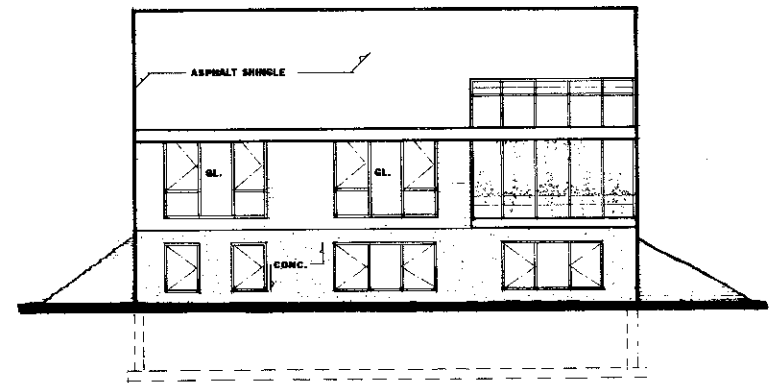
WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION



SOUTH ELEVATION

ELEVATION

scale: 1/4" = 1' - 0"

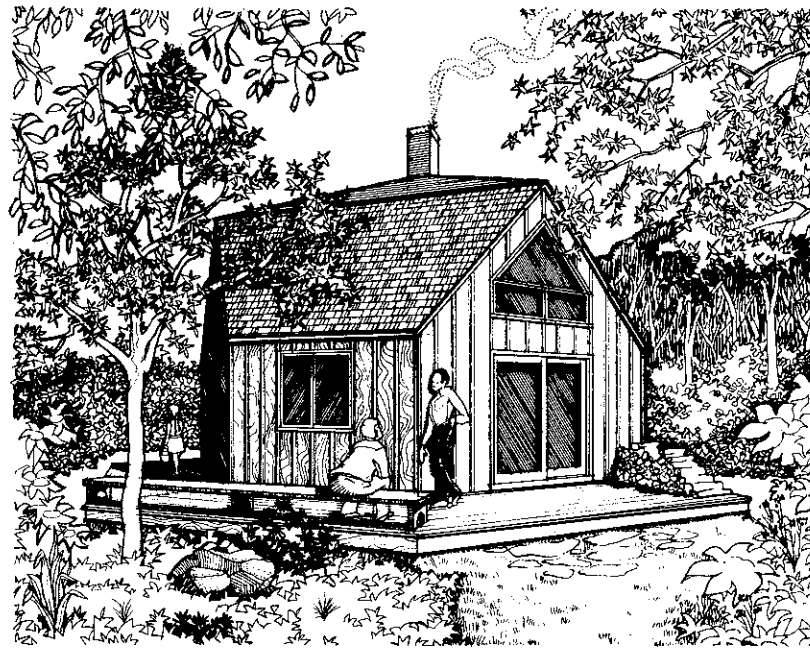
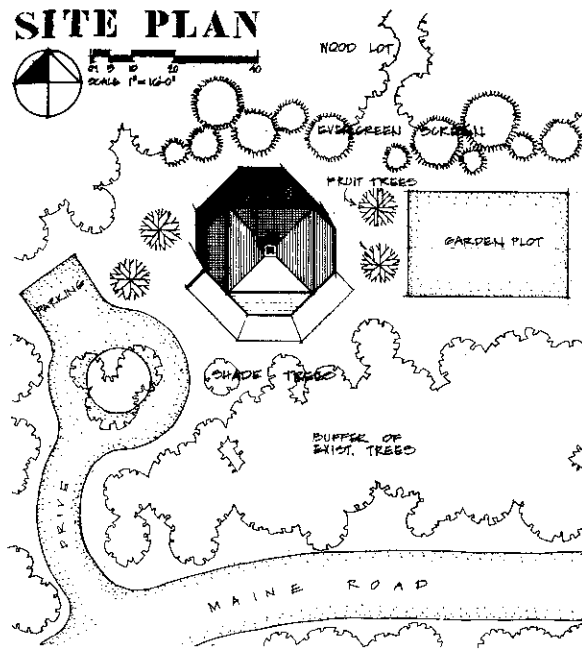
date:

designer: ☐
engineer: ☐
drawn by: ☐
traced by: ☐
checked by: ☐

revision:

sheet no.

D



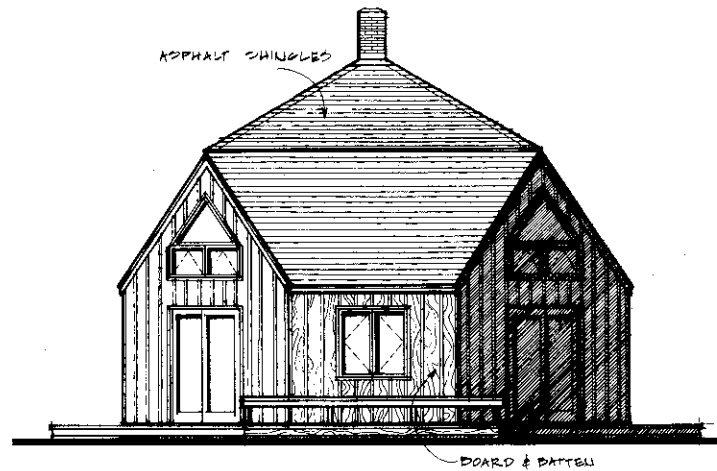
DRAWINGS

- 1 SITE PLAN & PERSPECTIVE
- 2 1ST & 2ND FLOOR PLANS
- 3 ELEVATIONS

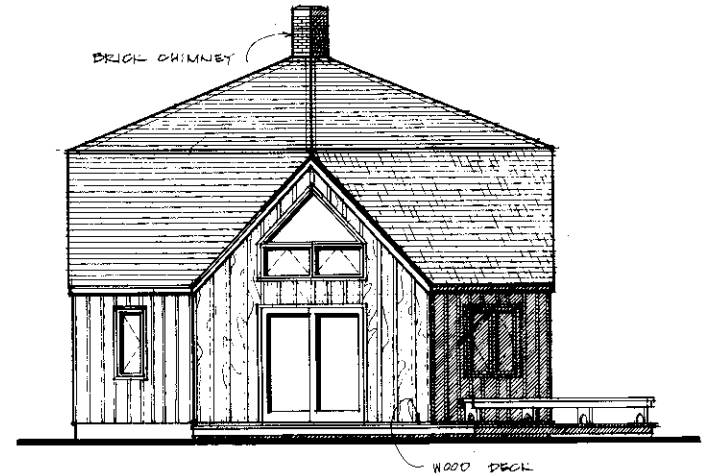
- 4 ELEVATIONS
- 5 SECTION A-A
- 6 SECTION B-B
- 7 FRAMING PLANS

THE MAINE COMPETITION

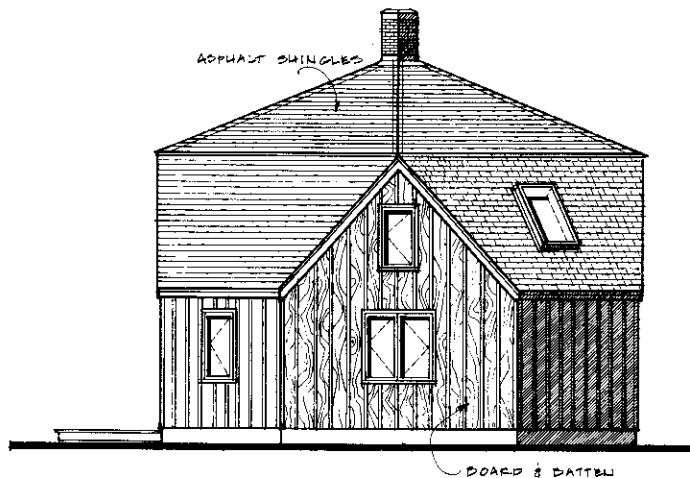
ARCHITECTURAL DESIGN FOR LOW-COST HOUSING



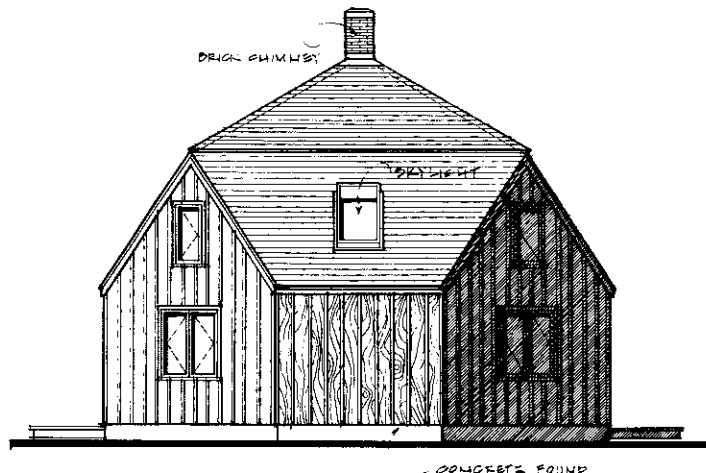
SOUTH ELEVATION
1/4" = 1'-0"



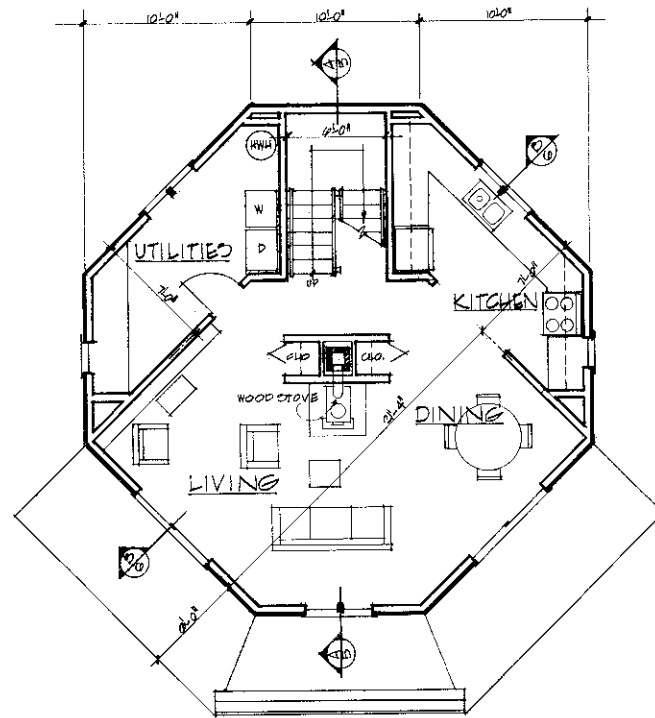
SOUTH WEST ELEVATION
1/4" = 1'-0"



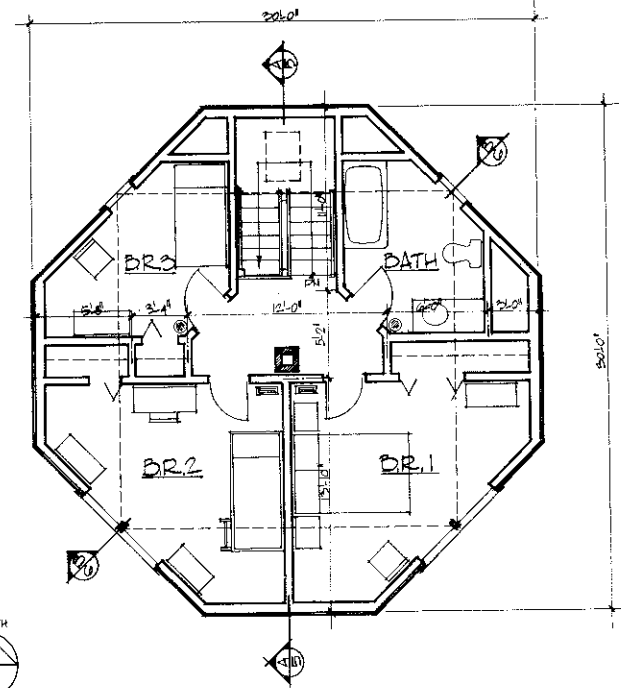
NORTHEAST ELEVATION
1/4"=1'-0"



NORTH ELEVATION
1/4"=1'-0"

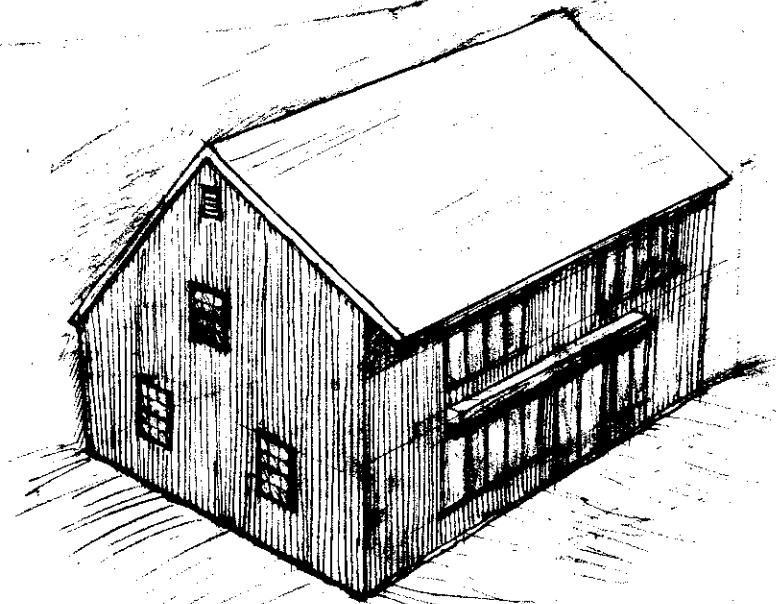


FIRST FLOOR PLAN
10'-0"

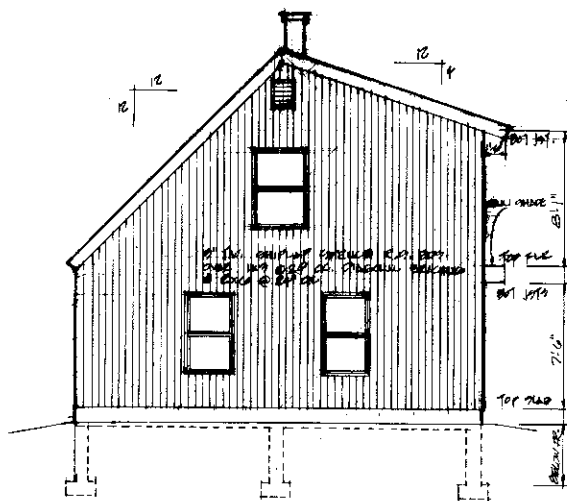


SECOND FLOOR PLAN
20'-0"

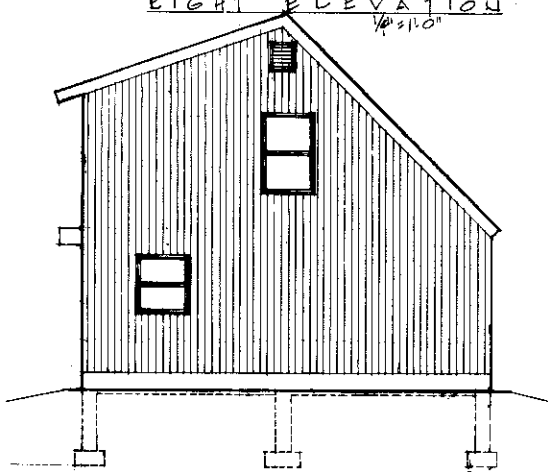
THE MAINE COMPETITION
ARCHITECTURAL DESIGN FOR LOW-COST HOUSING



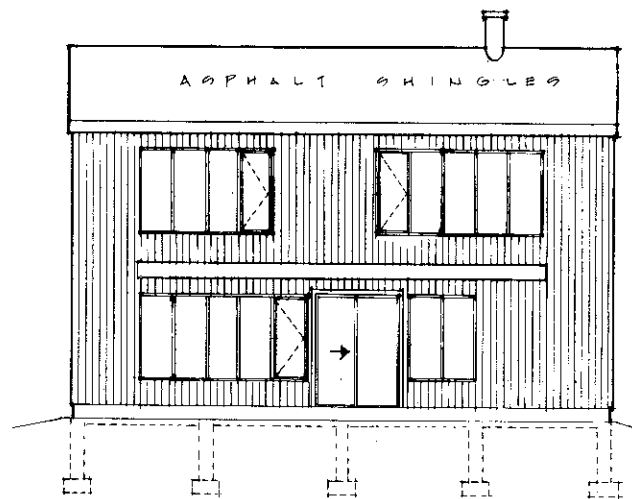
THE MAINE COMPETITION



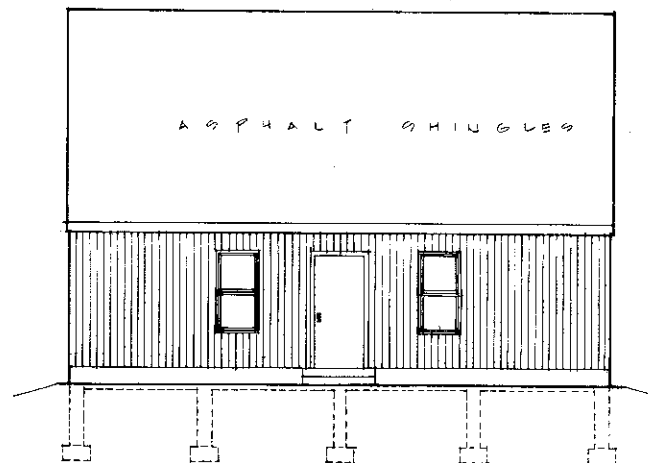
RIGHT ELEVATION



LEFT ELEVATION



REAR ELEVATION



FRONT ELEVATION

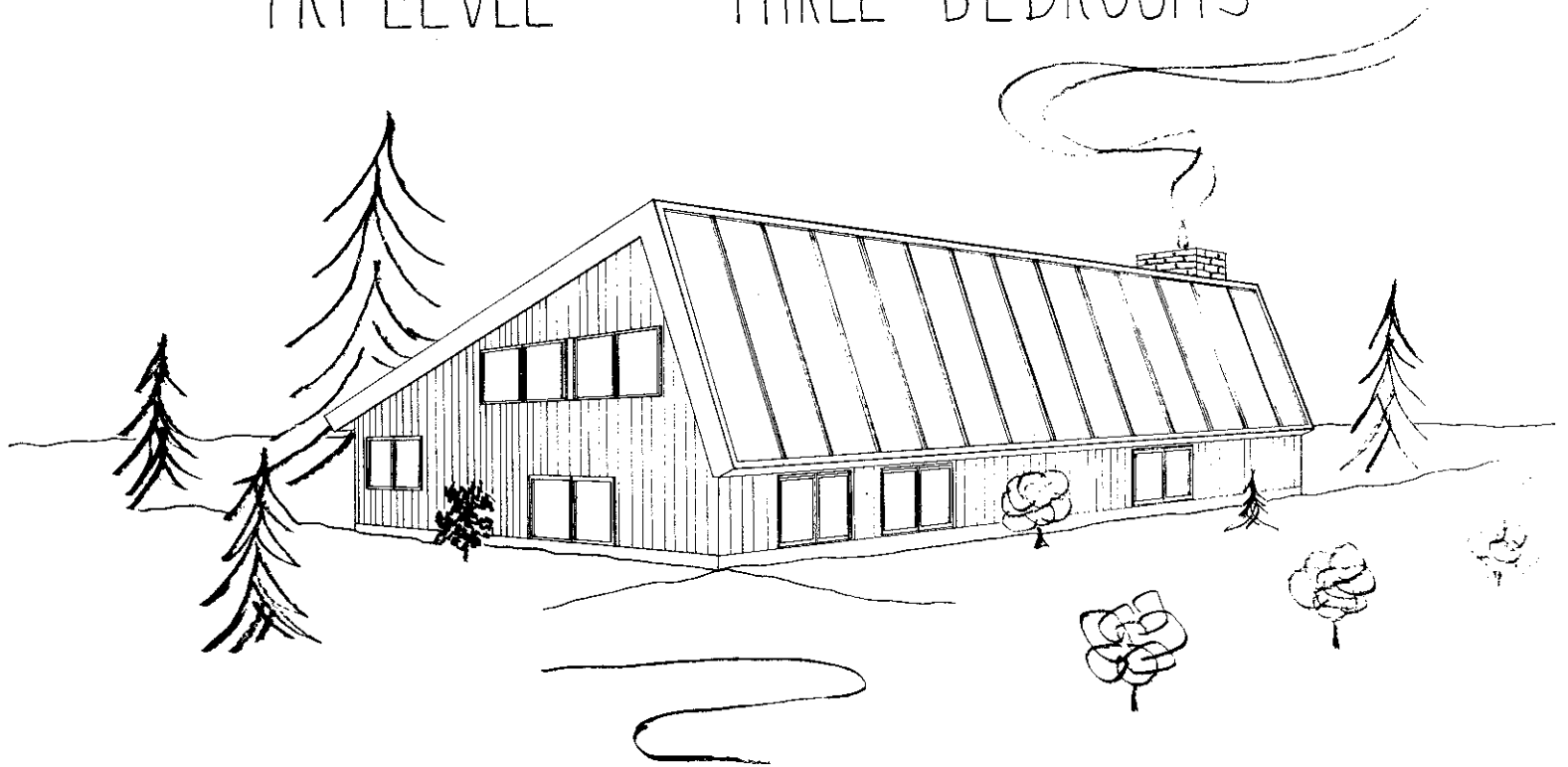
2

7

MAINE SOLAR HOME

TRI LEVEL

THREE BEDROOMS



SCALE: $\frac{1}{16}'' = 1'$

100 90 80 70 60 50 40 30 20 10 0

• • • •



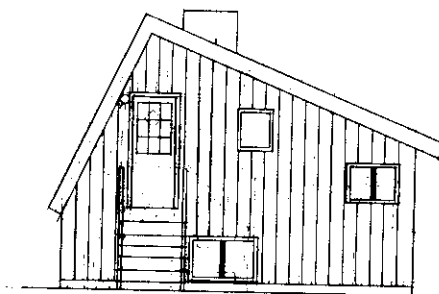
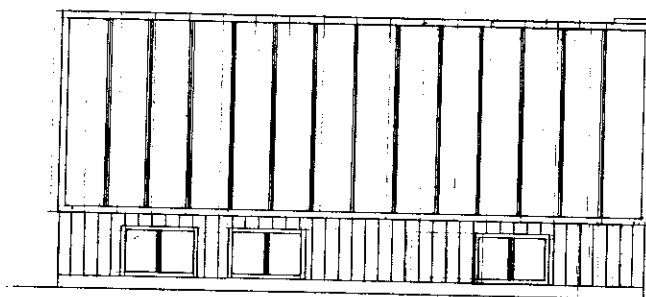
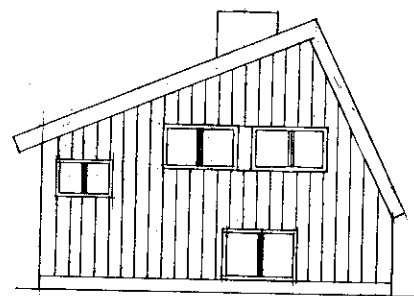
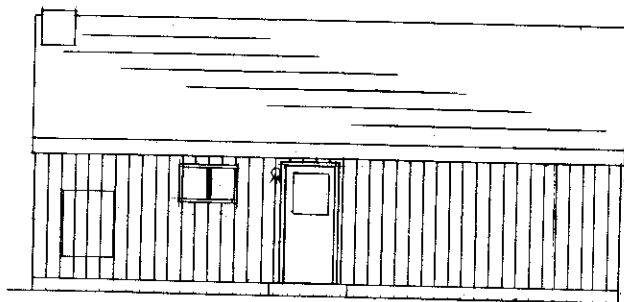
A hand-drawn floor plan of a house. The layout includes a Living Room (176 sq ft) on the left, a Dining Room (165 sq ft) at the bottom, and a Kitchen on the right. Other rooms include a Storage Room (70 sq ft), a Bathroom, a Kitchen, a Refrigerator (REF.), a Stove, and a Sink. There are also several numbered areas (1, 2, 3, 5) and letters (A, B) indicating specific locations or features. The plan is drawn with simple lines and includes some handwritten notes like 'Storage Room 70 sq ft', 'Living Room 176 sq ft', and 'Dining Room 165 sq ft'.

WINDOW SCHEDULE		
TYPE	SIZE REQ.	SIZE AVAILABLE
A	4'-7" x 2'-8"	NO STOCK
B	5'-1" x 2'-4"	"
C	4'-9" x 3'-0"	"
D	2'-6" x 2'-6"	CASEMENT

Hand-drawn floor plan of a three-bedroom house. The plan shows a front porch (6'-0" wide) leading into a living room (12'-0" x 12'-0") with a fireplace. To the left is a bathroom (5'-0" x 7'-0") and a bedroom (10'-0" x 11'-0"). To the right is a bedroom (13'-0" x 13'-0"). The back of the house contains a dining room (11'-0" x 11'-0"), a kitchen (10'-0" x 11'-0"), a utility room (11'-0" x 7'-0"), and a rear porch (6'-0" wide). A central hallway connects the rooms. The overall dimensions are 24'-0" wide by 36'-0" deep.

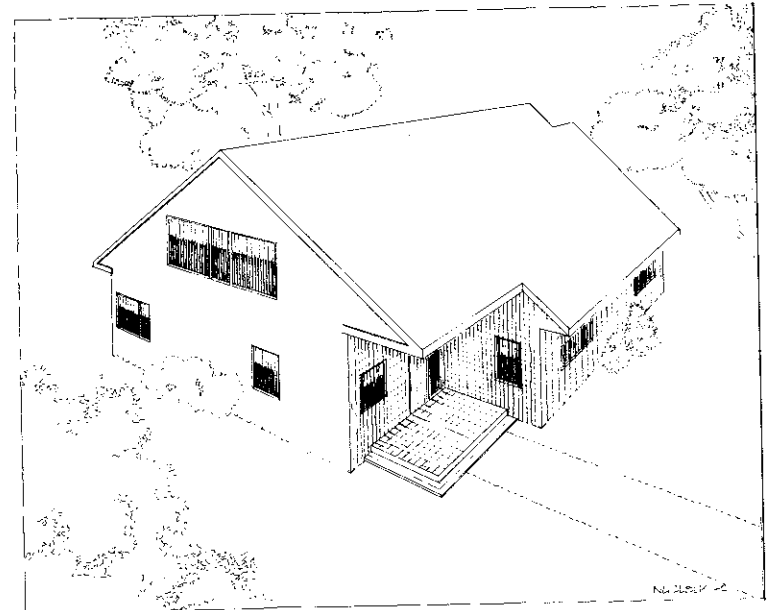
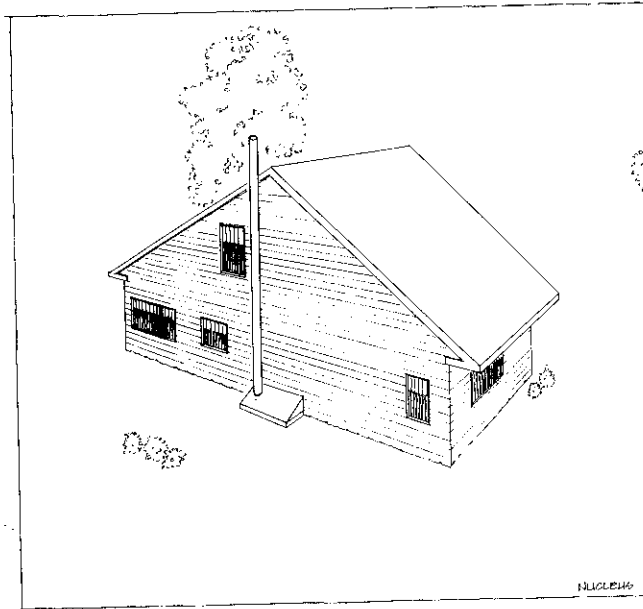
Door Schedule		
TYPE	SIZE	STYLE
1	3'-0" x 6'-8"	INTERIOR SLIDING
2	2'-8" x 6'-8"	"
3	2'-6" x 6'-0"	INTERIOR HIDDEN SW
4	2'-0" x 6'-8"	"
5	78" WIT STNG	OUTSIDE COMBINATION
6	2'-6" x 6'-0"	INTERIOR HIDDEN SW

REVISIONS	SHEET:	DATE:
	FLOOR PLAN	8/27/96
	DRAW BY	ADP'S BY
	PARK: AM 76060	SCALE: 1/4" = 1'-0"

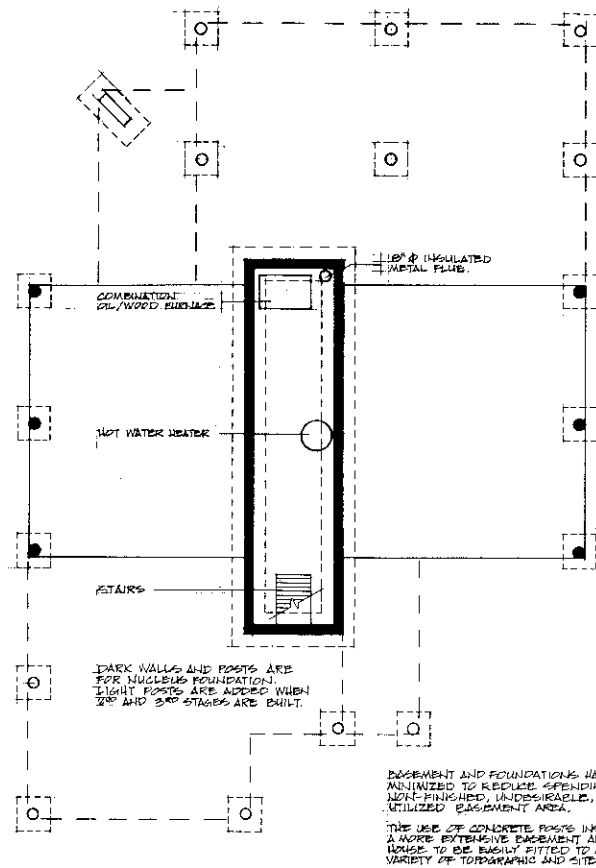


REVISIONS	
<div> <div>DATE</div> <div>9/25/76</div> </div>	<div> <div>DATE</div> <div>9/25/76</div> </div>
<div> <div>BY</div> <div>DATE</div> </div>	<div> <div>BY</div> <div>DATE</div> </div>
<div> <div>PLAN NO.</div> <div>76060</div> </div>	<div> <div>SCALE</div> <div>1/4" = 1'-0"</div> </div>

AN ADDITIVE DESIGN APPROACH



THE MAINE COMPETITION



FOUNDATION PLAN

NUCLEUS FOUNDATION IN BLACK
NUCLEUS +2 FOUNDATION IN WHITE

3

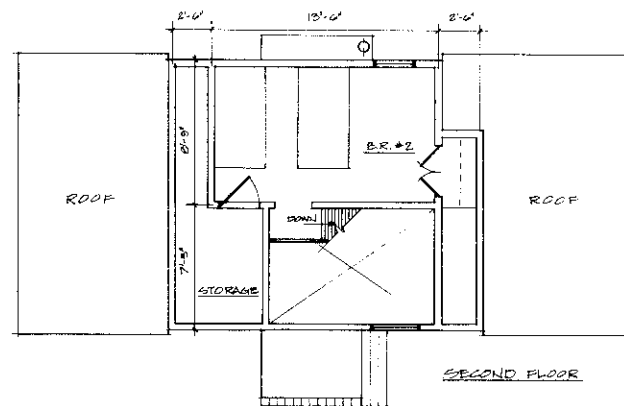
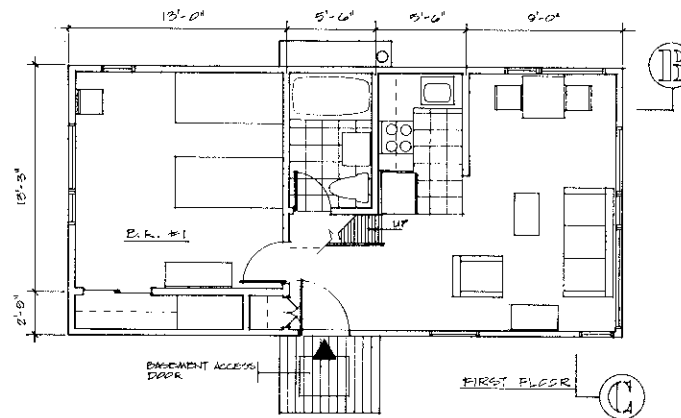
SCALE: $\frac{1}{8}" = 1'-0"$

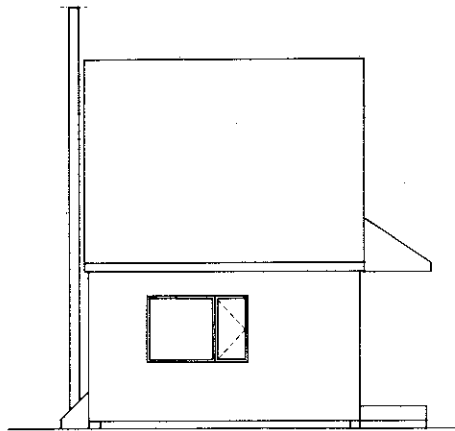
THE MAINE COMPETITION

NUCLEUS PLANS

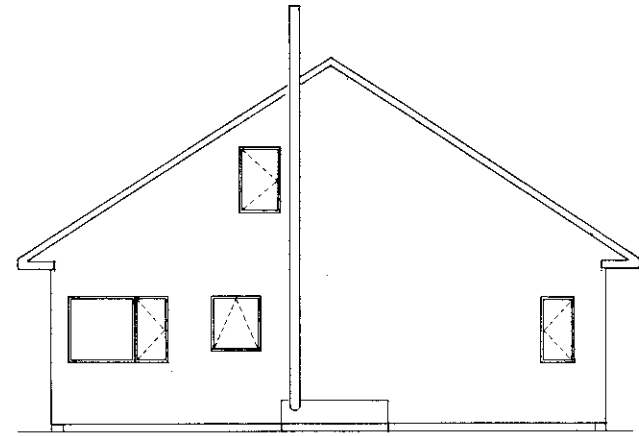
FIRST STAGE OF CONSTRUCTION
2 BR ; 1ST FL. 520.0 , 2ND FL. 220.0

SCALE: $\frac{1}{8}" = 1'-0"$

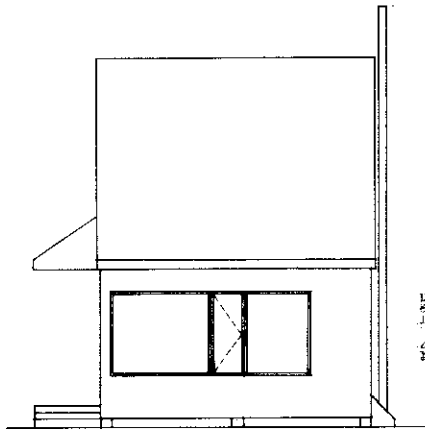




NORTH



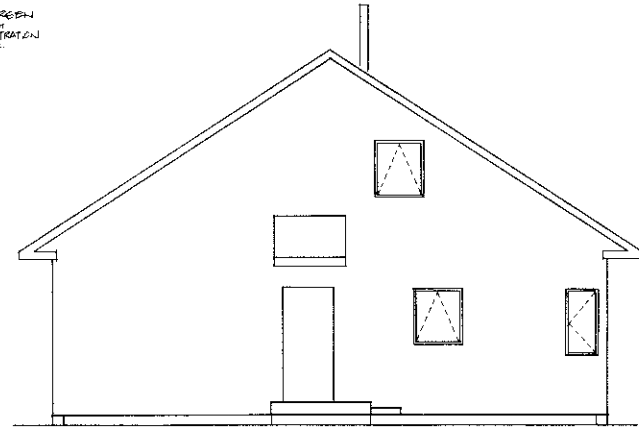
EAST



SOUTH

WINDOWS SHOWN ARE ANDERSEN
PERSH-SHIELD WITH INSULATING
GLASS FOR BEST U AND INSULATION
VALUES AND LOW MAINTENANCE.

LARGE WINDOW AREAS ON SOUTH
SIDE TO MAXIMIZE INSULATION
IN WINTER.
OVERHANG SHIELDS WINDOWS
FROM SUMMER SUN.



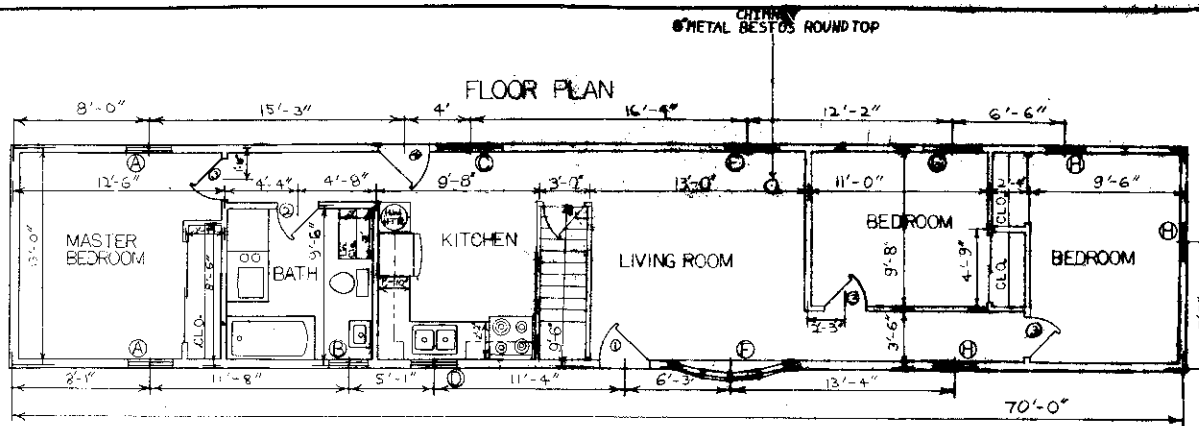
WEST

NUCLEUS ELEVATIONS

SCALE: $\frac{1}{8}'' = 1'-0''$

4

THE MAINE COMPETITION

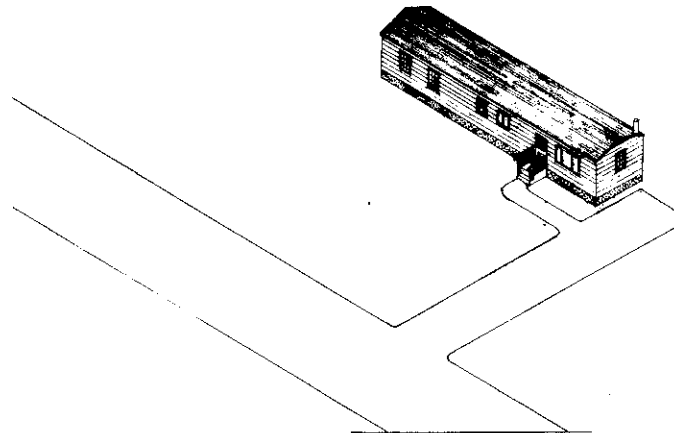


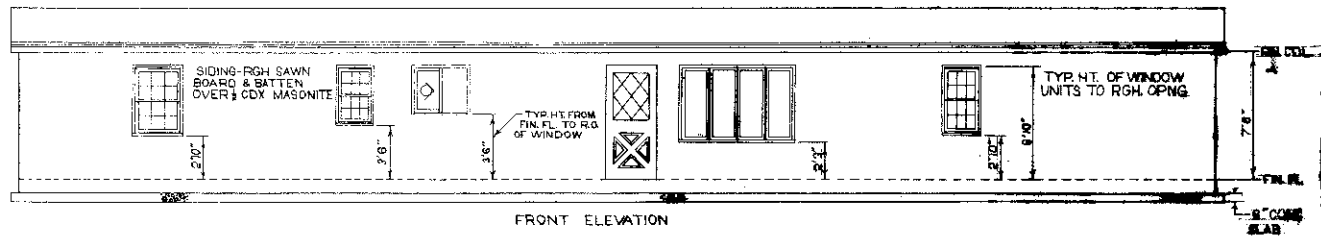
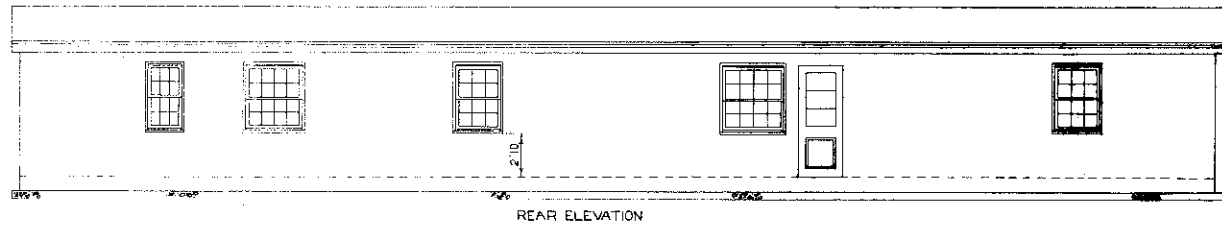
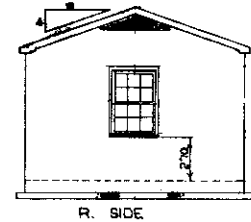
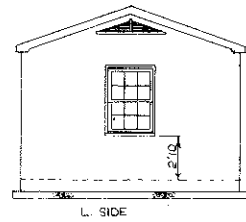
WINDOW SCHEDULE			
LOC.	G. S.	REMARKS	R. O.
A	28/20	EX. HUNG CLOS.	2'-10 1/2" X 4'-0 1/4"
B	20/1	DOUBLE HUNG CLOS.	2'-2 1/2" X 3'-4 1/4"
C	40/20	DOUBLE HUNG CLOS.	3'-10 1/2" X 4'-0 1/4"
D	16/28	HORIZONTAL SLIDER	3'-2 1/2" X 2'-10 1/4"
E	26/20	SARACCO CLOS.	2'-6 1/2" X 4'-0 1/4"
F	CAT. #	ANDERSON FRAME AND CASSEMENT BOW BOW 1'-0" SASH	6'-9 3/8" X 4'-7 1/8"
G	36/20	DOUBLE HUNG CLOS.	3'-6 1/2" X 4'-0 1/4"
H	20/20	C.H. CLOS.	2'-2 1/2" X 4'-0 1/4"

NOTE: ALL DIMENSIONS TAKEN FROM OUTSIDE FACE OF STUD & CENTER OF PARTITION

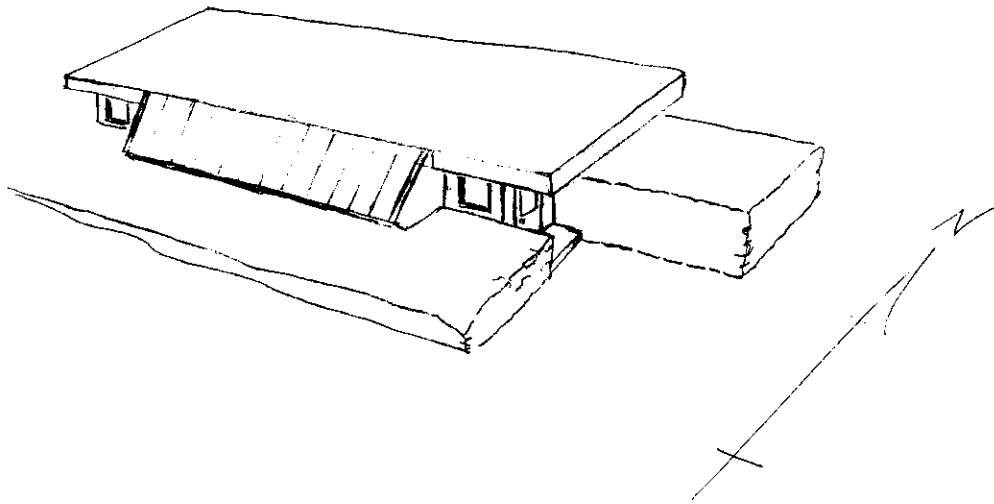
LINEN CLOSET TO BE CONSTRUCTED OF 1/2" PLYWOOD W/ SHELVES

DOOR SCHEDULE			
1	3'-0" X 6'-8" X 1 3/4"	BROSCO M-11A	
2	2'-4" X 6'-4" X 1 3/8"	BROSCO 600 BIR	
3	2'-6" X 8'-6" X 1 3/8"	HOLLOW CORE	
4	2'-8" X 6'-8" X 1 3/4"	D.O.	
		BROSCO M-124	



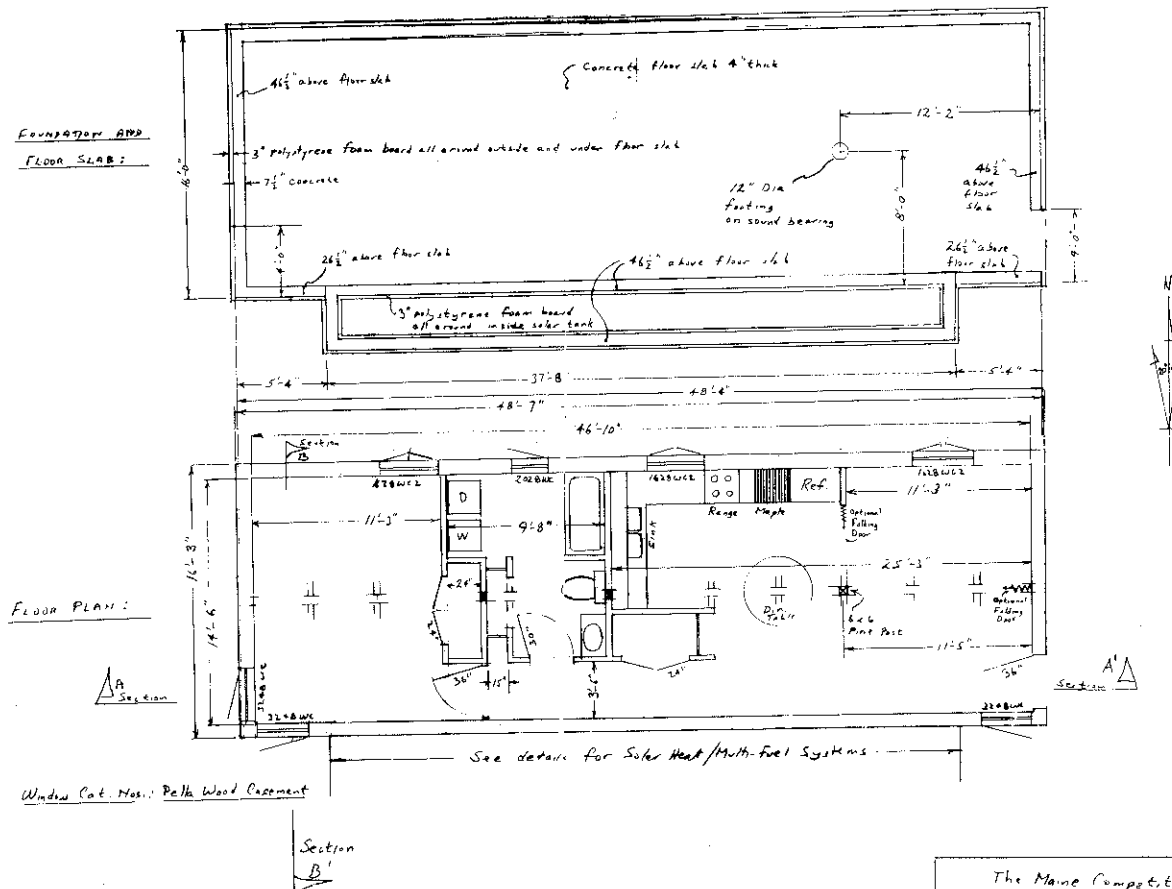


Entry in
The Maine Competition:
Architectural Design
For Low-Cost Housing

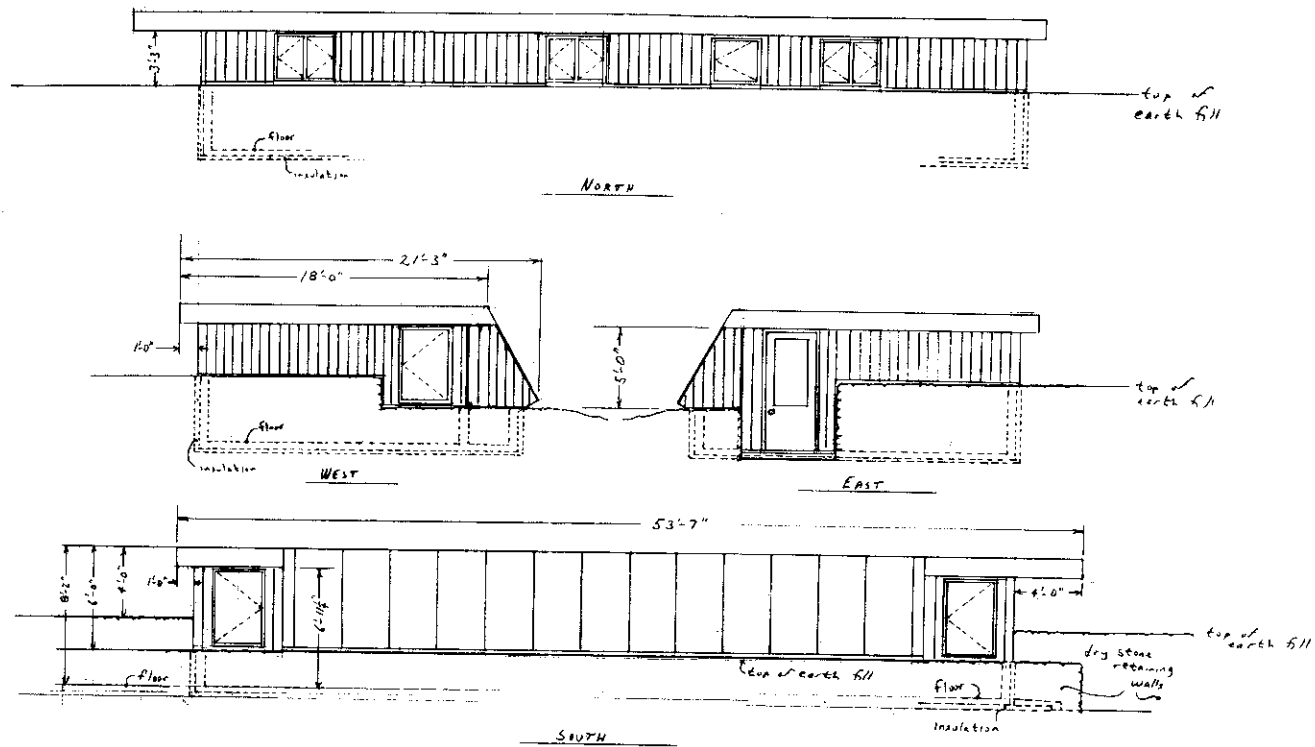


10

— earthhome —



The Maine Competition:
For Low-Cost Housing
Entry - "earthhome"
C. Floor Plans



The Maine Competition:
For Low-Cost Housing
Entry - "earthhome"
J. Elevations

Maine Competition
LOW-COST HOUSING

INDEX TO DRAWINGS


INDEX TO DRAWINGS

- Title Page and Sketch
- Site Plan
- Floor Plan
- Elevations
- Framing Sections
- Framing Plan
- Mechanical
- Electrical
- Details and Notes

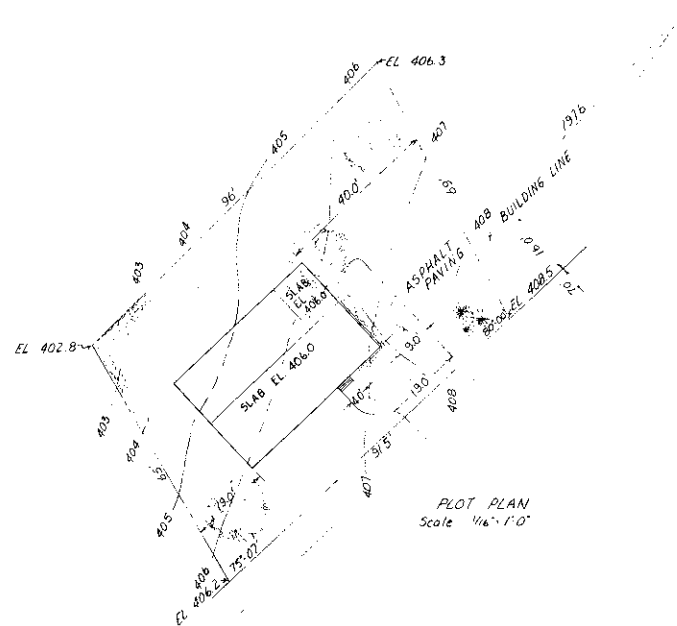
GENERAL NOTES

GENERAL NOTES
All work shall be in strict accordance with local building codes and ordinances.
All concrete shall be "Building Code" concrete and develop 3,000 lbs. PSI in 28 days
All electrical work conform to the latest edition of national electrical code and local ordinances.
All plumbing work shall conform to the latest edition of the national plumbing code and local ordinances.

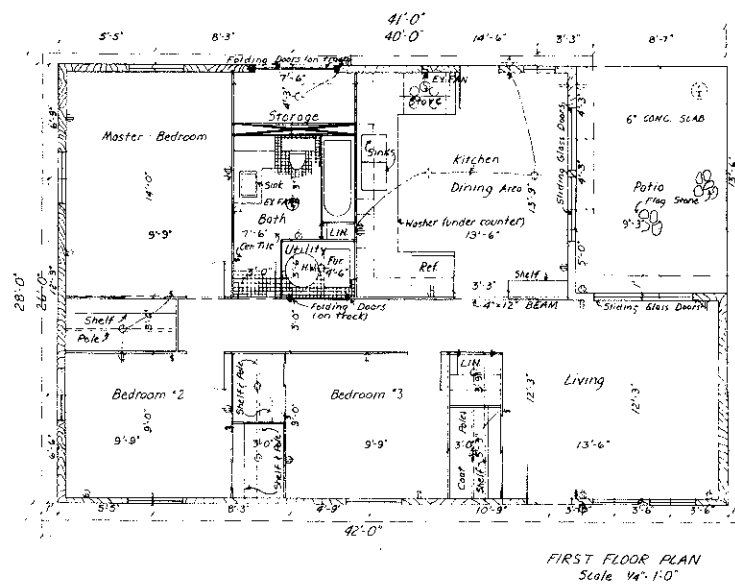
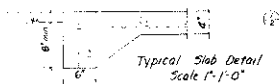
DETAIL SYMBOL

Detail number — 

Sheet number —

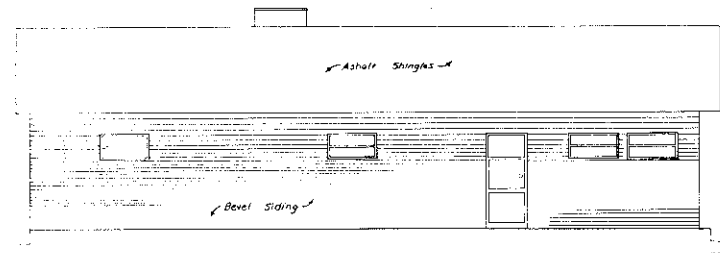


Maine Competition
LOW-COST HOUSING

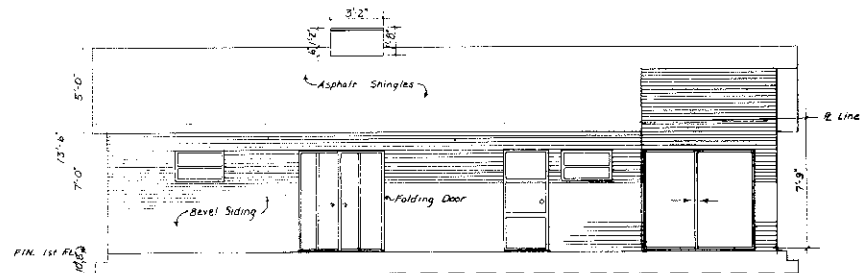


Sheet 2 of 5

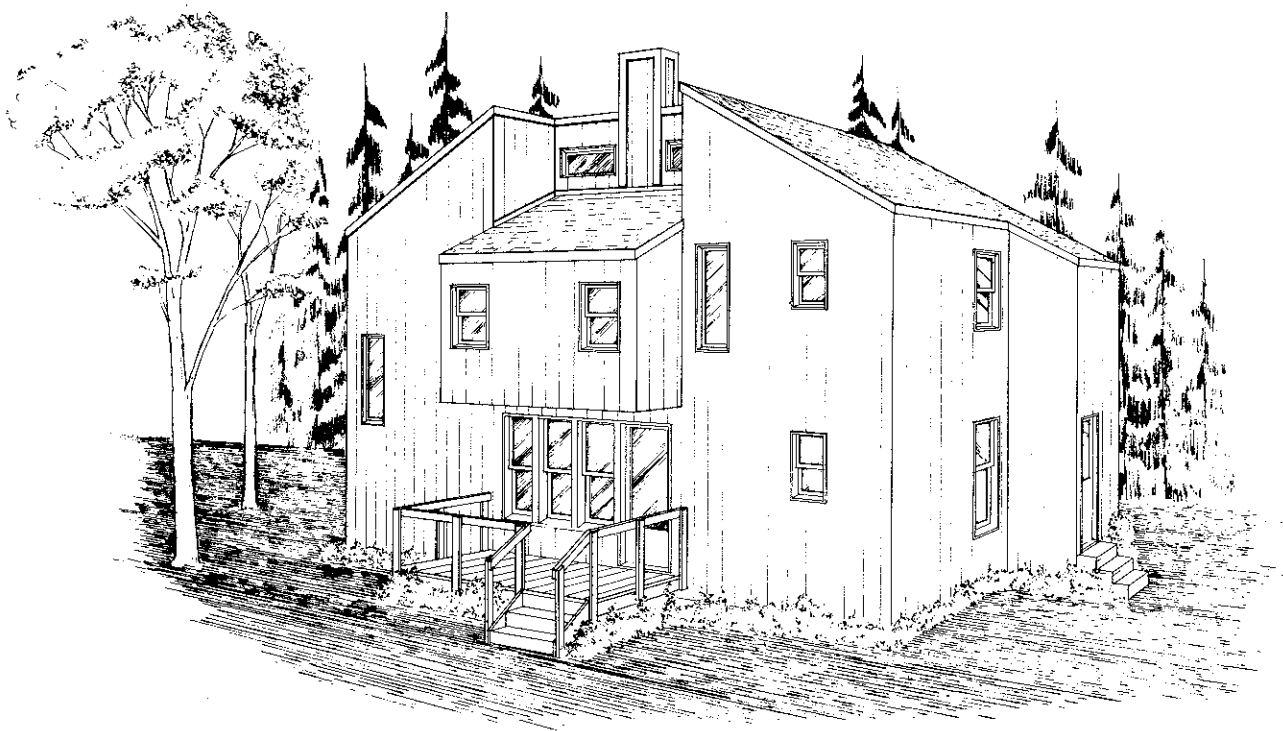
Maine Competition
 LOW-COST HOUSING



FRONT ELEVATION
 Scale 1/4" = 1'-0"



REAR ELEVATION
 Scale 1/4" = 1'-0"

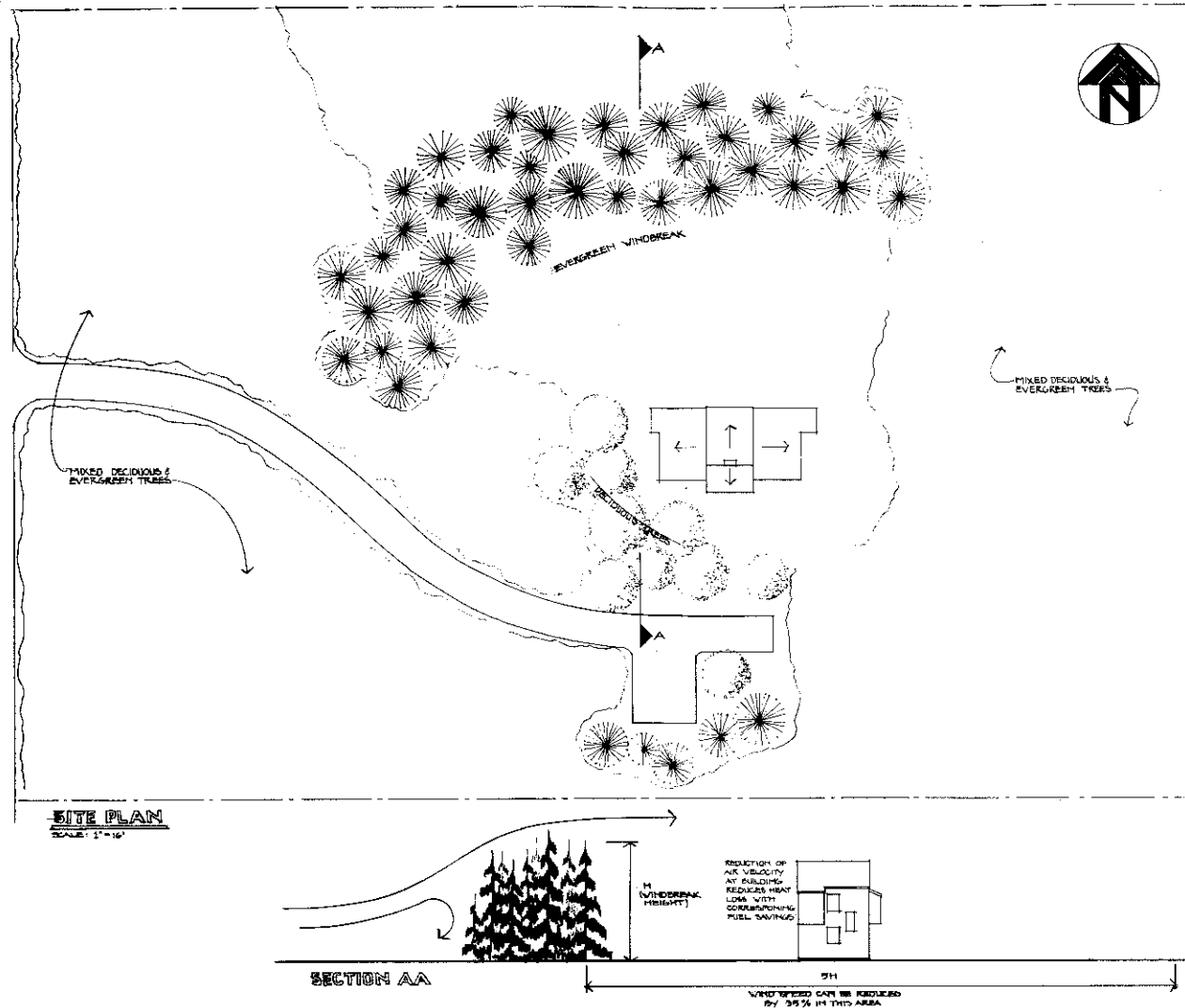


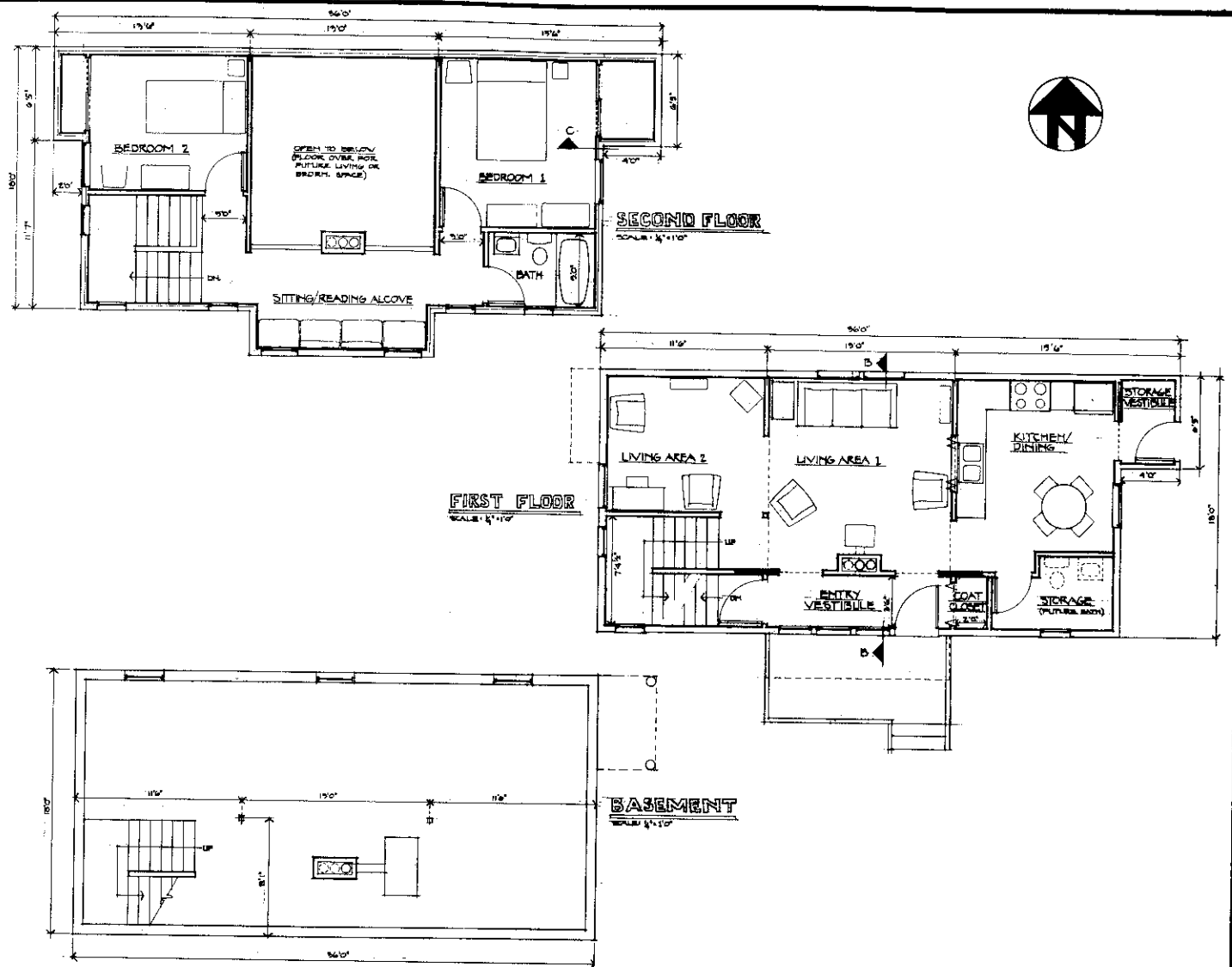
12

Architectural Design for Low-Cost Housing

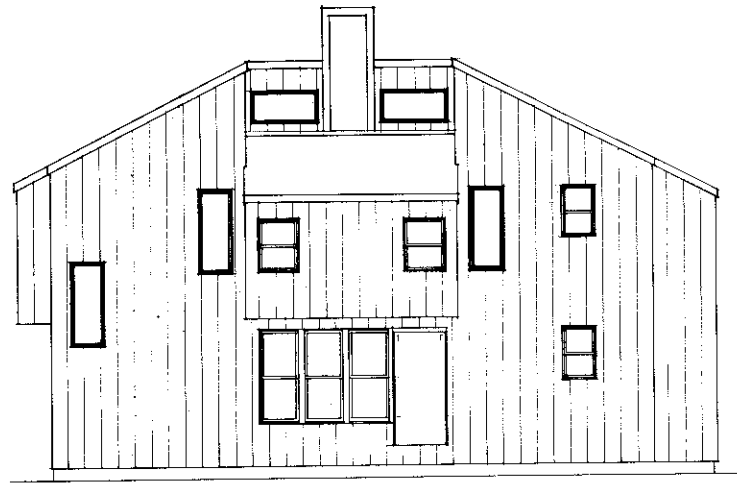
THE MAINE COMPETITION

TWO

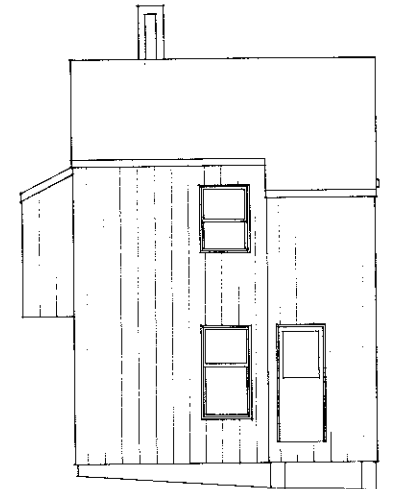




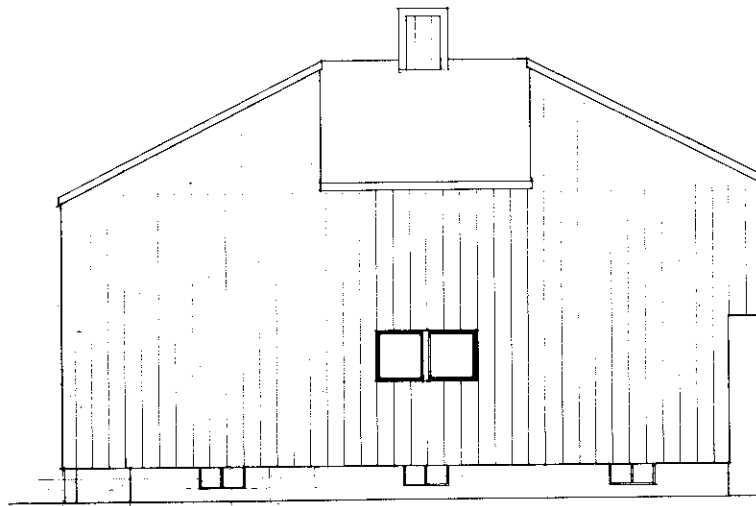
THE MAINE COMPETITION



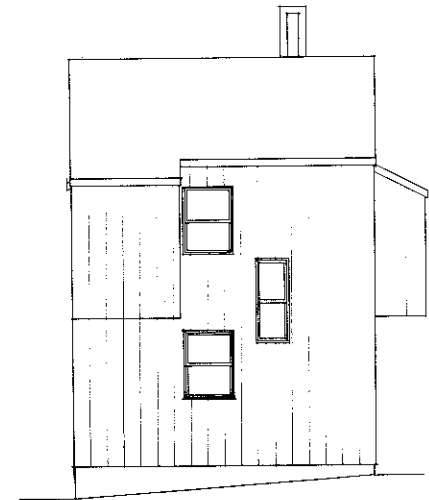
SOUTH ELEVATION



EAST ELEVATION



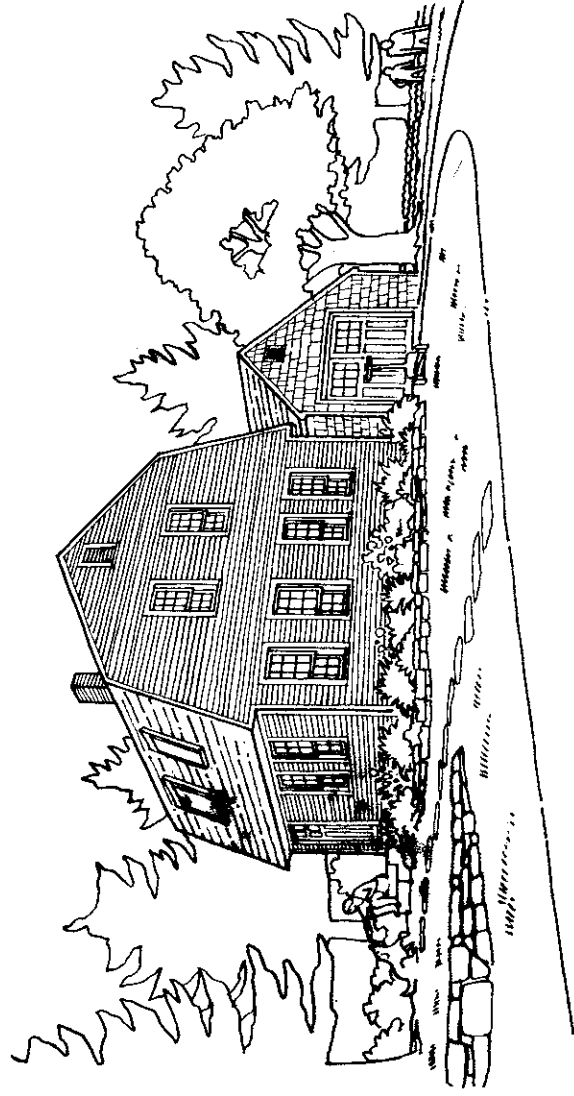
NORTH ELEVATION



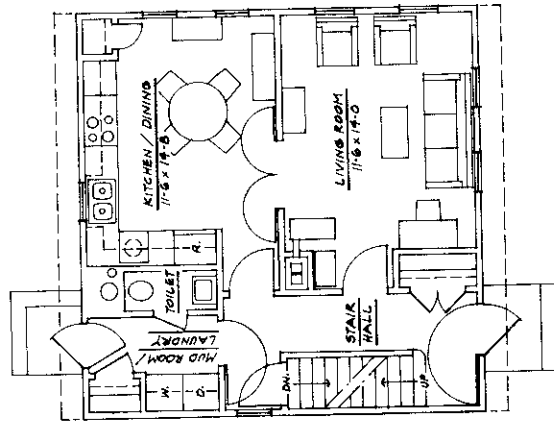
WEST ELEVATION

FOUR

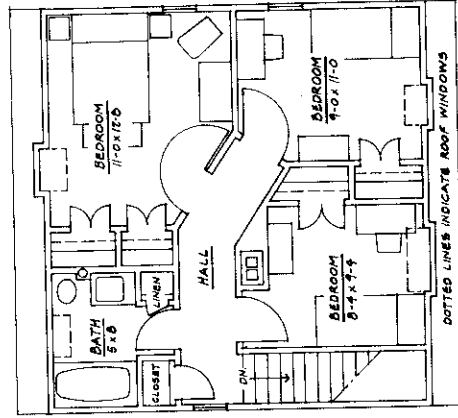
THE MAINE COMPETITION



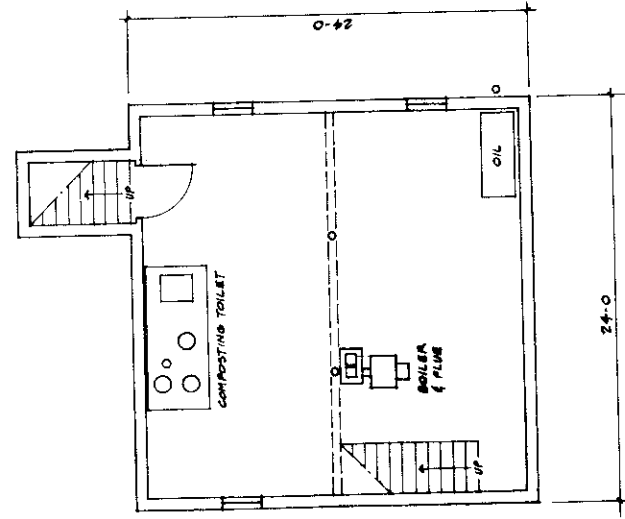
LOW COST HOUSING



FIRST FLOOR PLAN



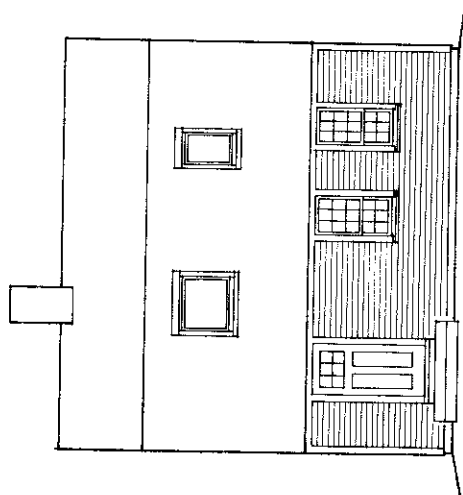
SECOND FLOOR PLAN



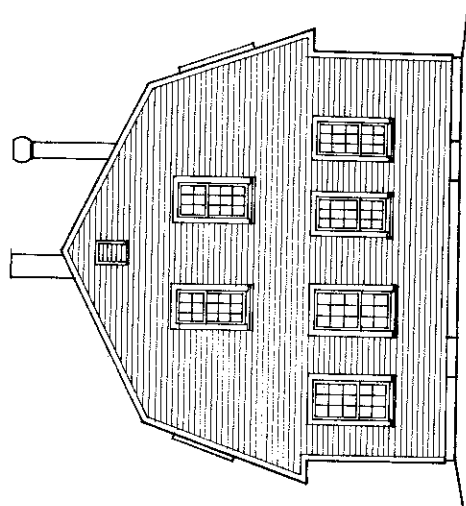
BASEMENT PLAN



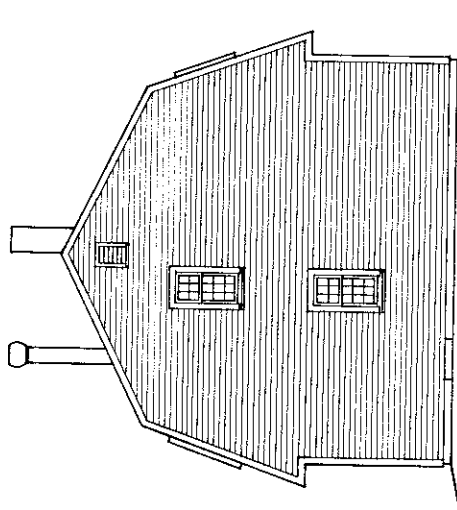
FLOOR PLANS		
MAINE COMPETITION	3	
SEPT. 1, 1976	3 OF 7	



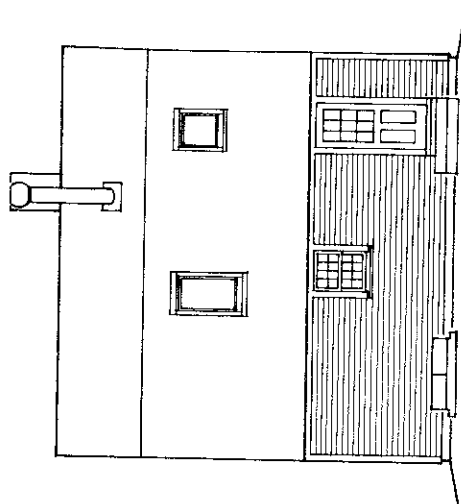
WEST ELEVATION



SOUTH ELEVATION

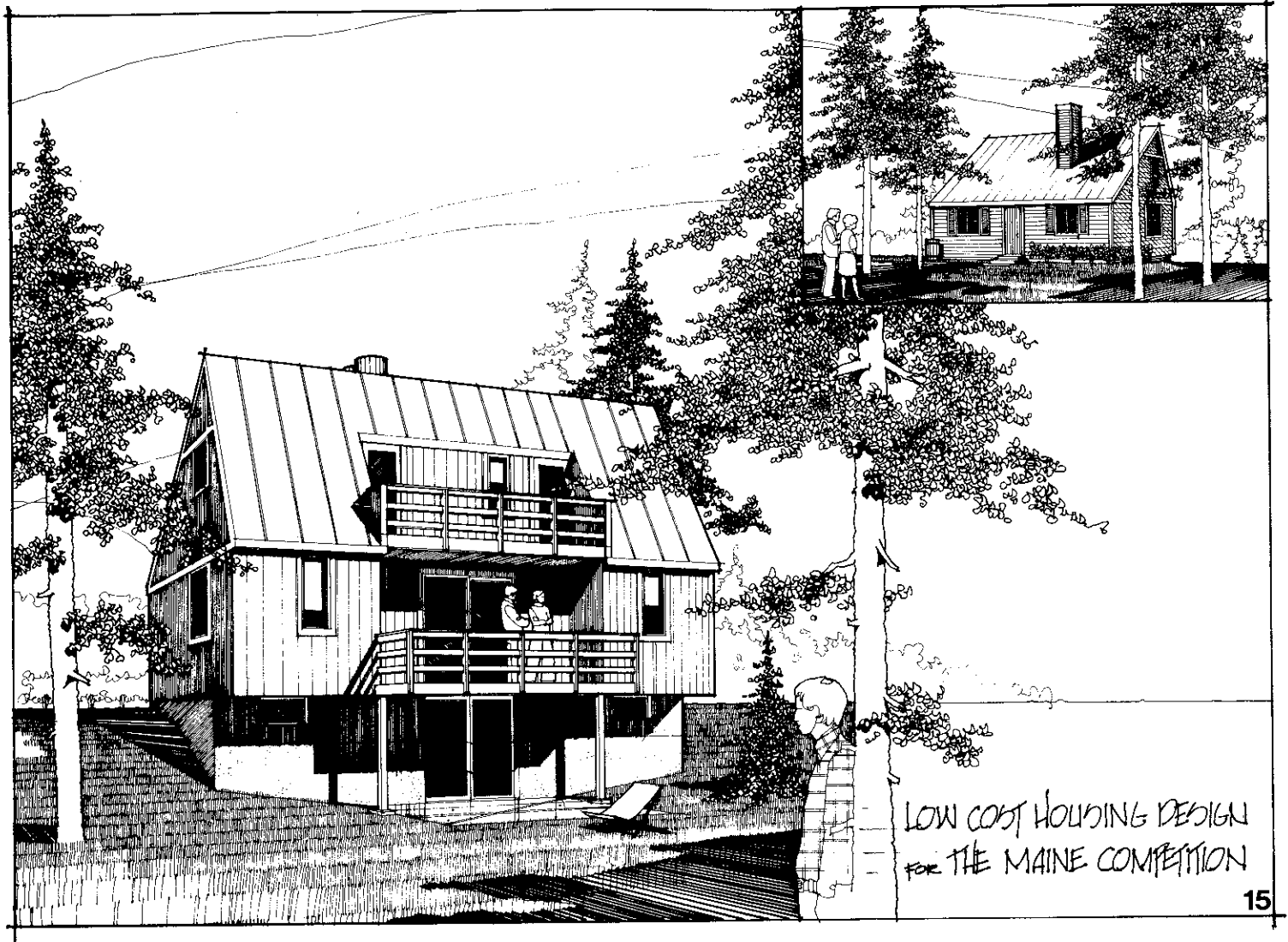


NORTH ELEVATION



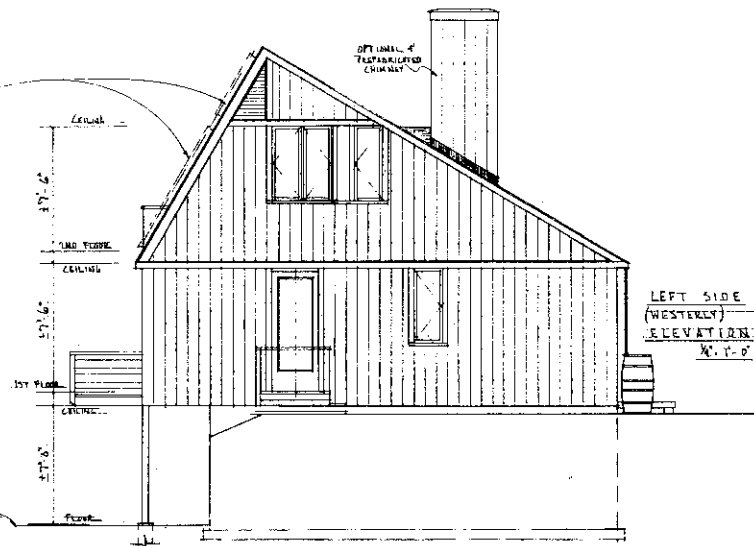
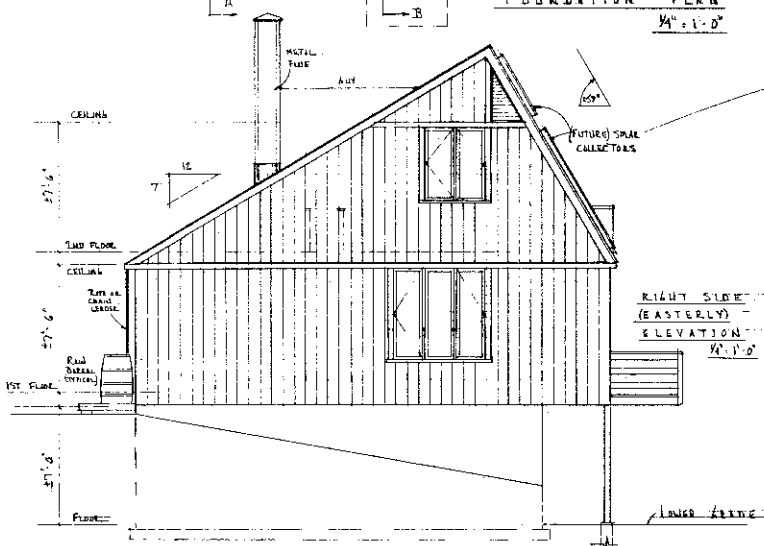
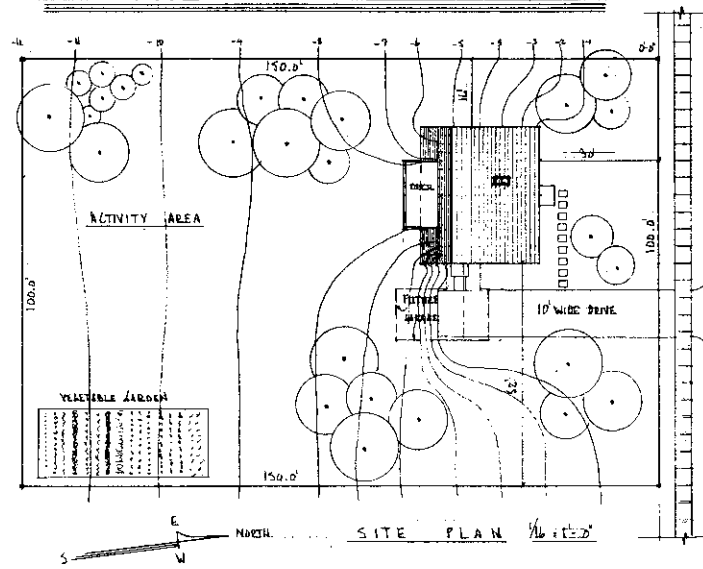
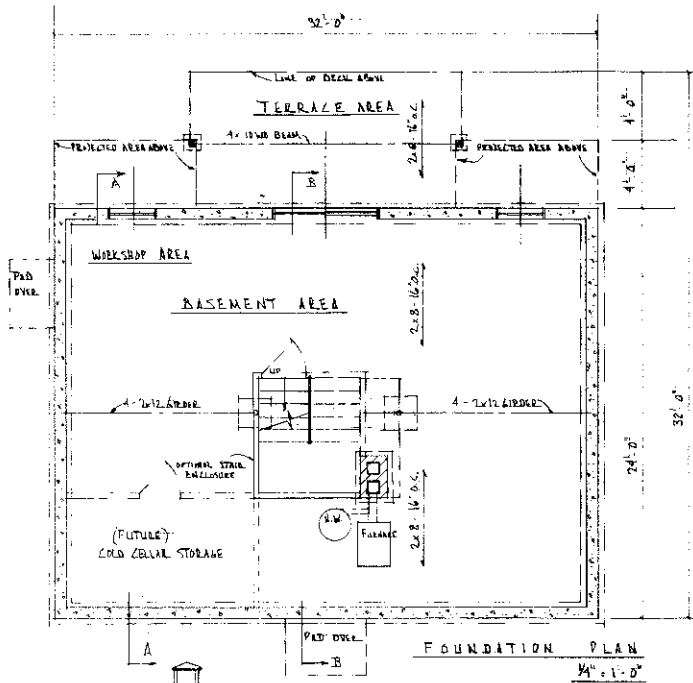
EAST ELEVATION

ELEVATIONS		
MAINE	4	
COMPETITION		
SEPT. 1, 1976		4 OF 7



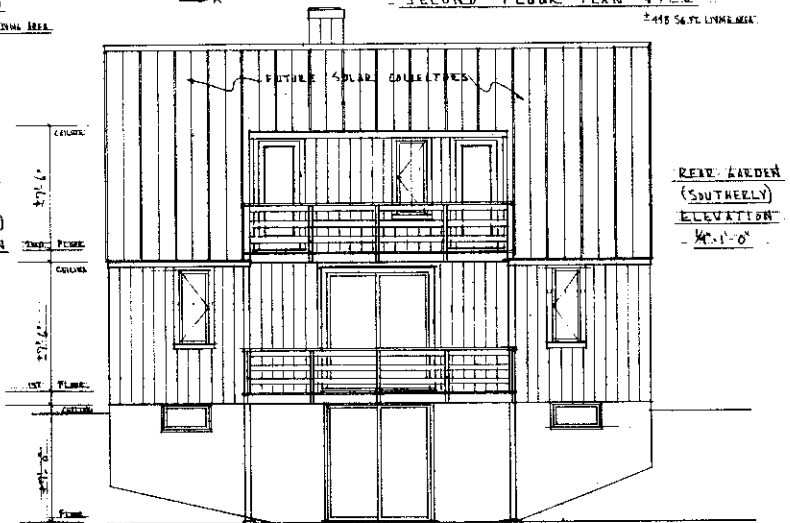
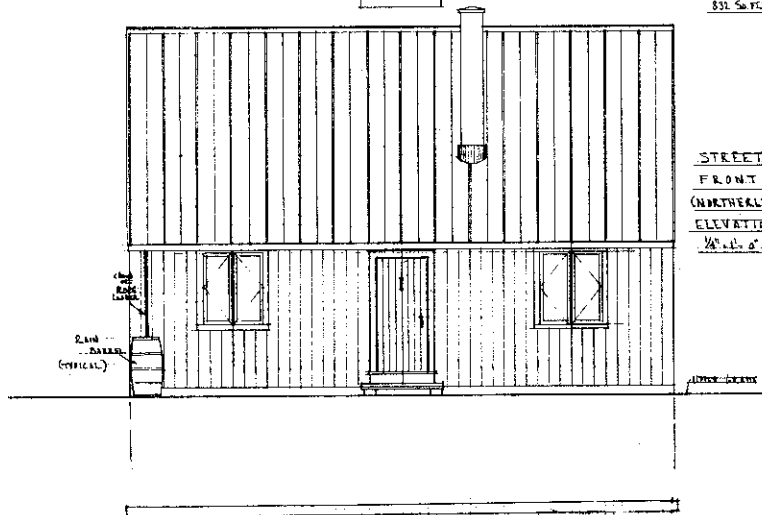
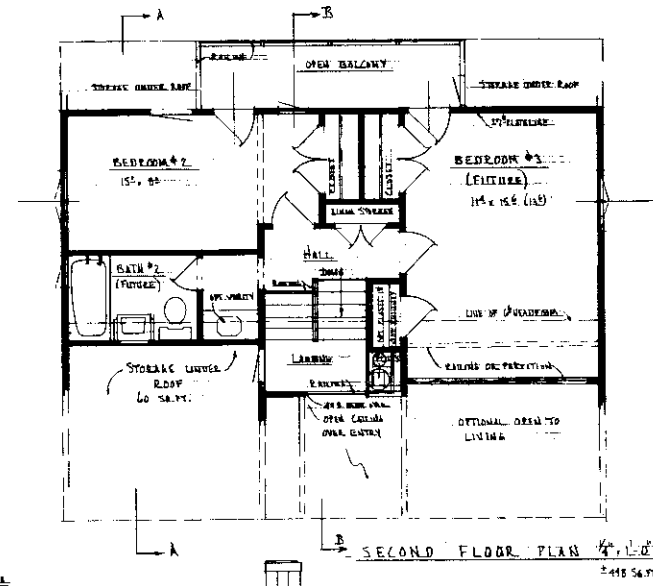
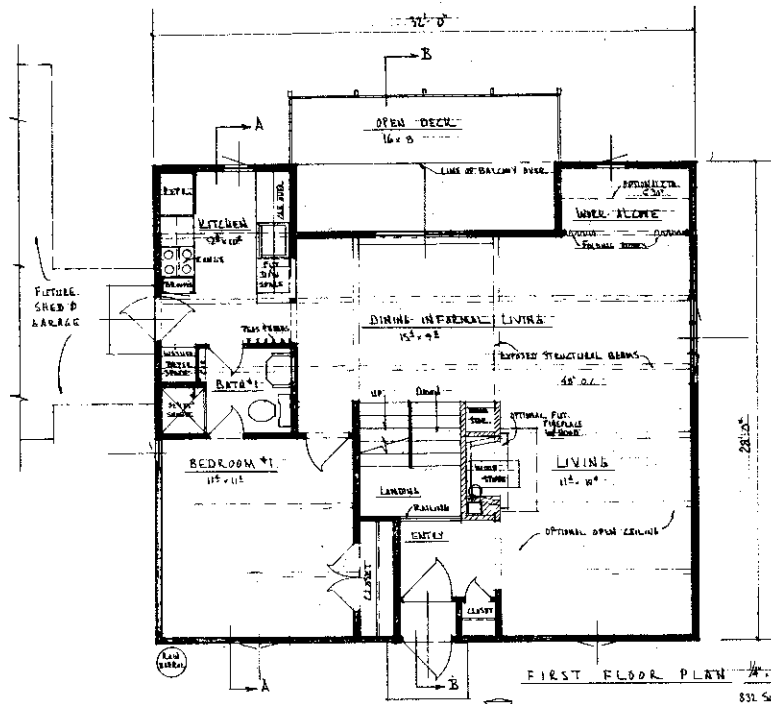
LOW COST HOUSE DESIGN for THE MAINE COMPETITION

2



LOW COST HOUSE DESIGN for THE MAINE COMPETITION

1



LOW COST HOUSING

1

THE MAINE COMPETITION FOR DESIGN OF LOW COST HOUSING.

1



ORIGINAL DEVELOPMENT - DATE
MADE: WITH 1st PRIZE FOR
MAY 1968 (JULY 68)

2

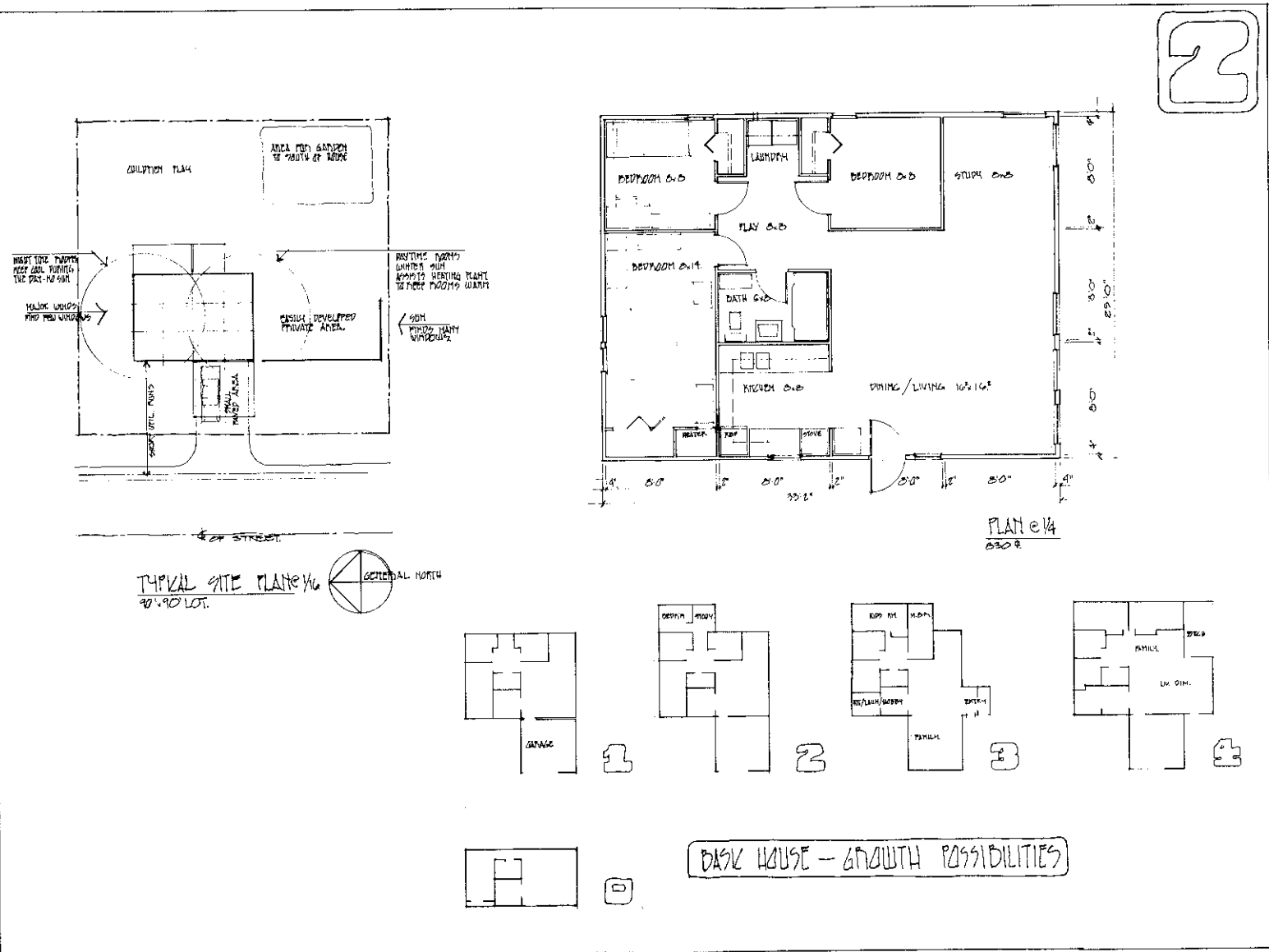


1st SET OF CHANGES - ADDITIONS
TO SOME EXISTING "APARTMENTS"
CHANGES REFLECTING DIFFERENT
THE LITERATURE.

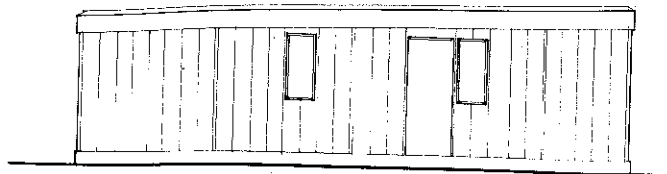
3



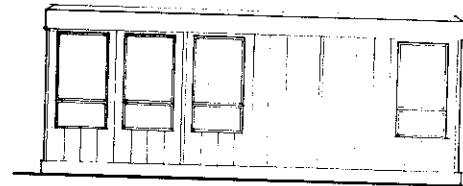
2nd SET OF CHANGES - ADDITIONAL
TWO SETS OF CHANGES - ADDITIONAL
CHANGES REFLECTING DIFFERENT
THE LITERATURE.



3



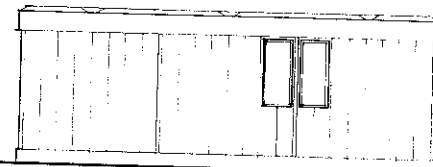
WEST (FRONT) ELEV.



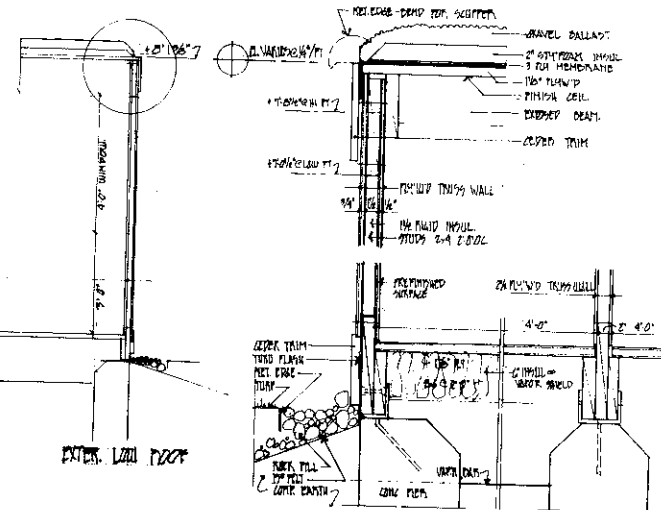
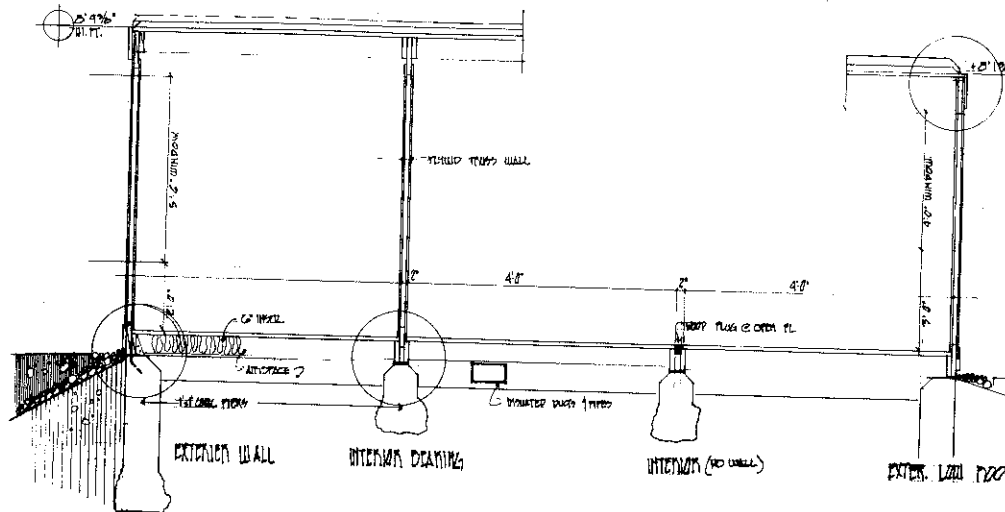
SOUTH ELEV.

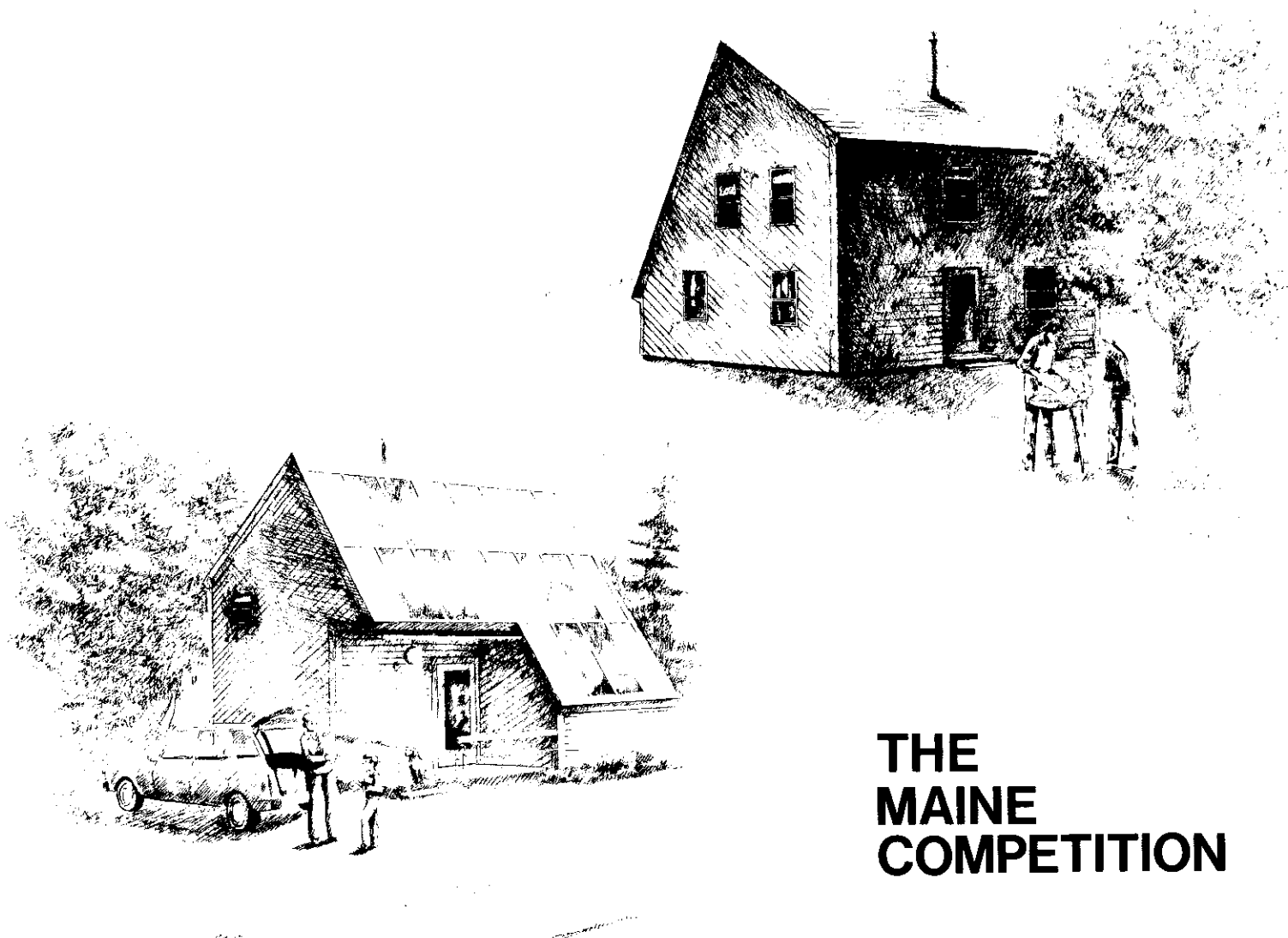


EAST ELEV.

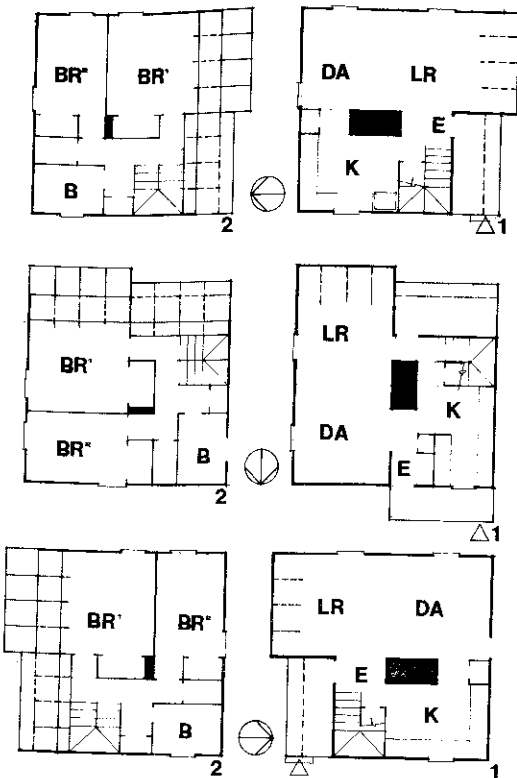


NORTH ELEV.

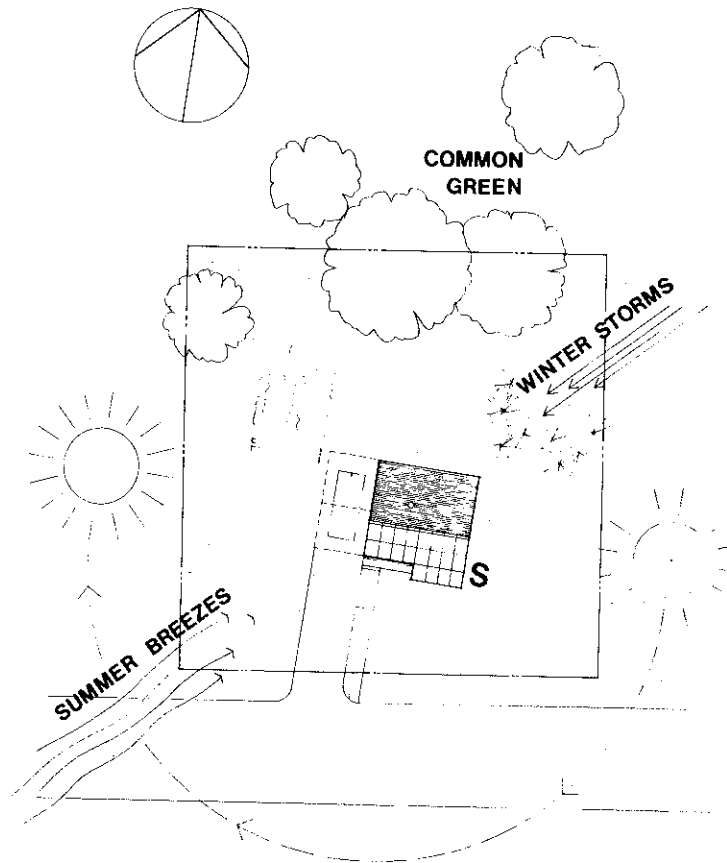
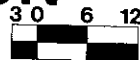




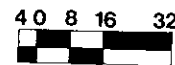
THE MAINE COMPETITION

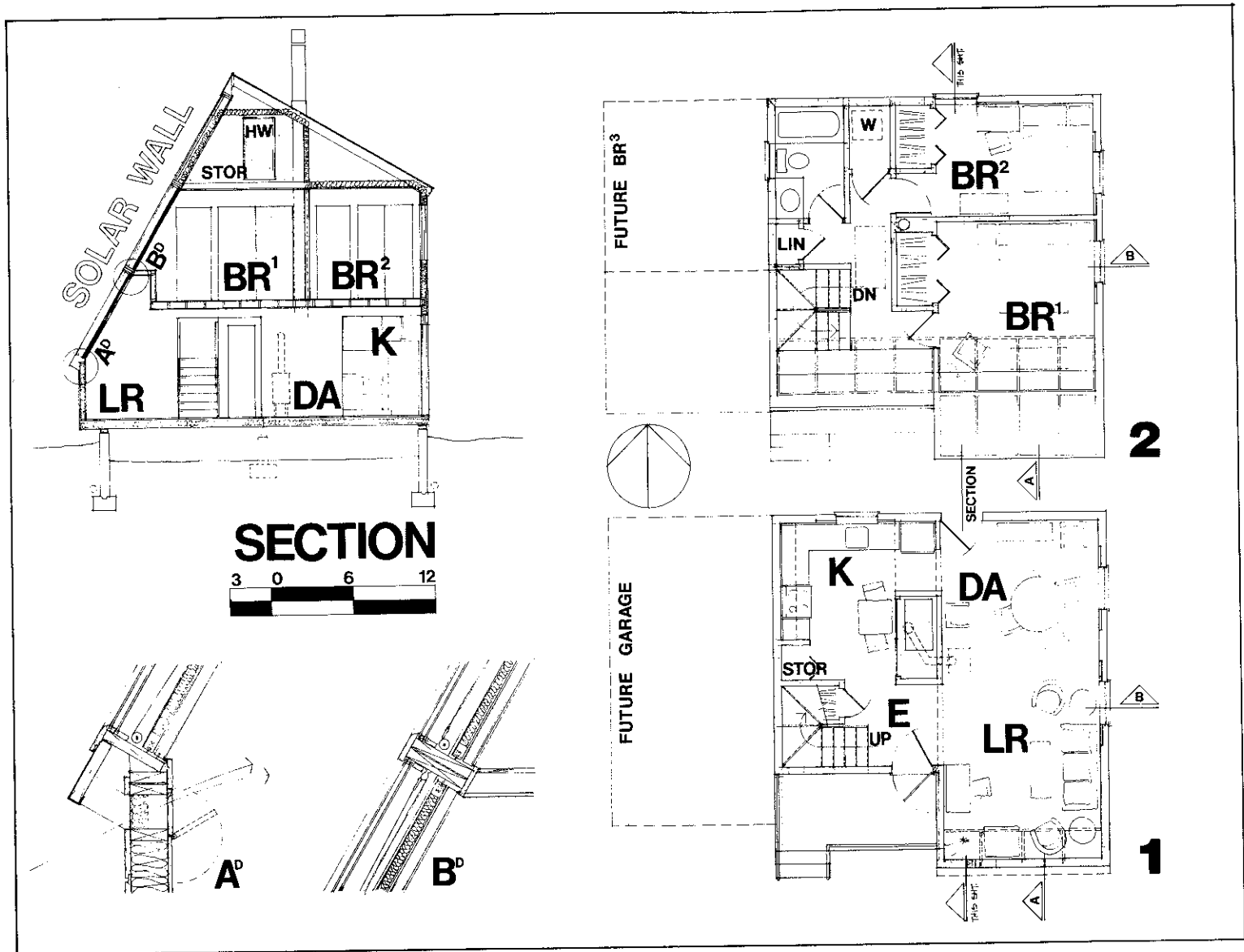


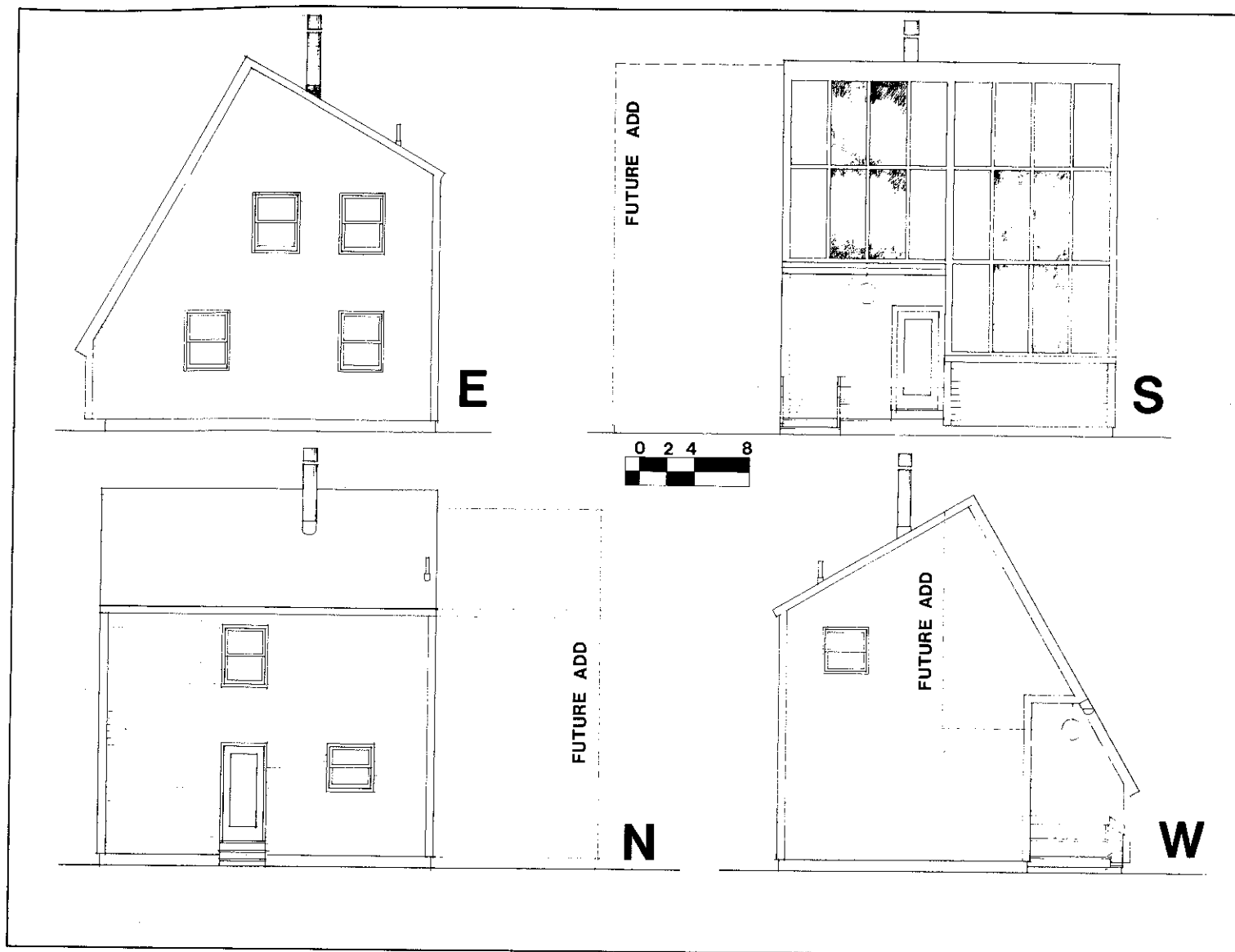
**ORIENTATION
SYSTEM**

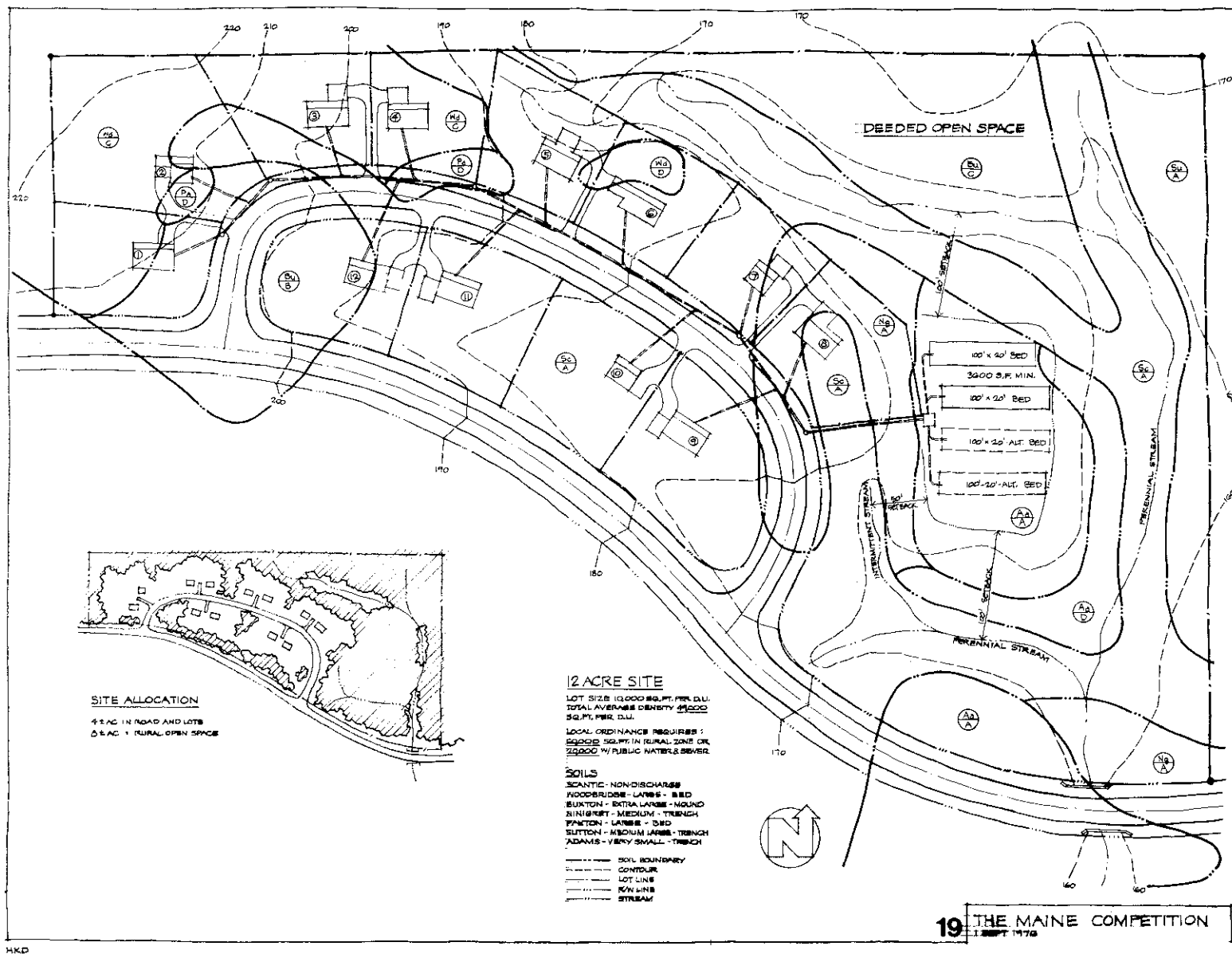


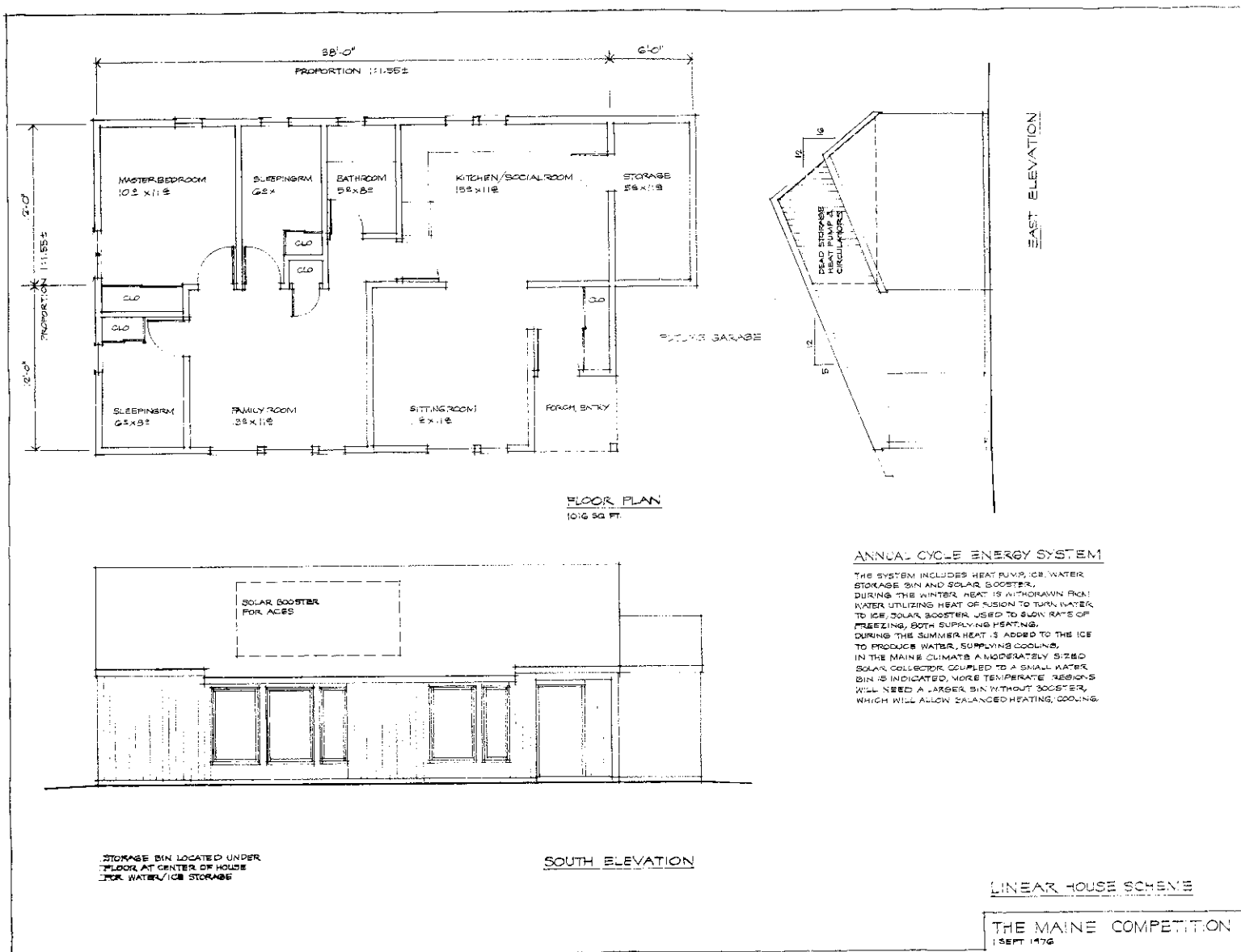
**SITE
PLAN**

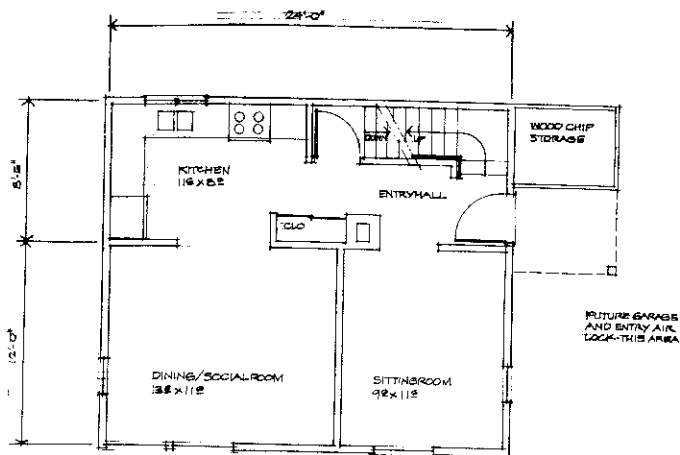




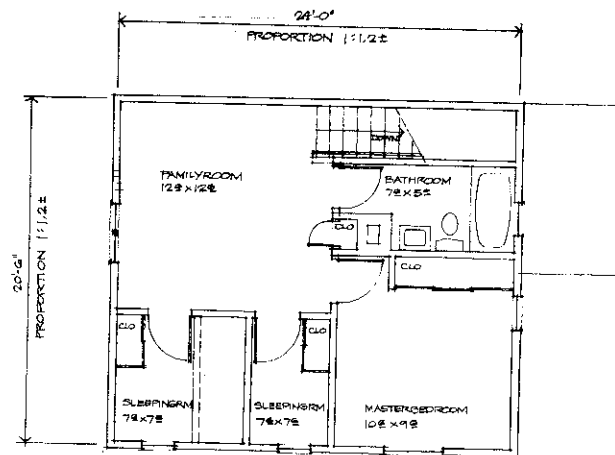




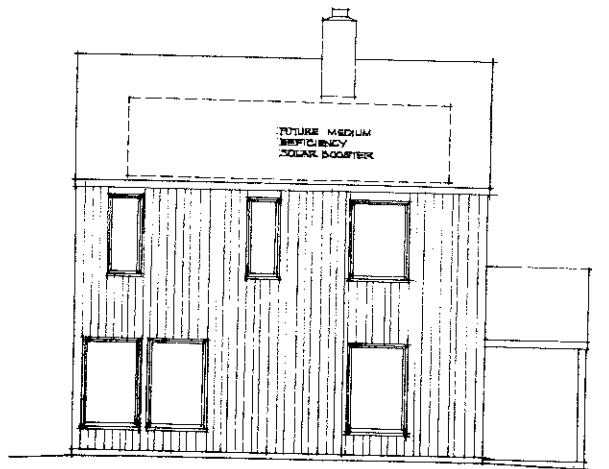




FIRST FLOOR
514 SQ. FT.

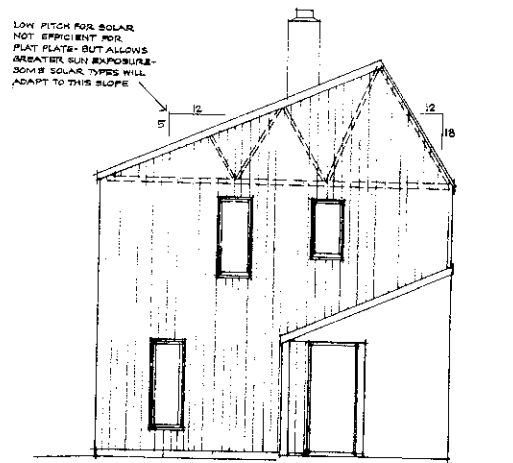


SECOND FLOOR
514 SQ. FT.



BASMENT SPACE FOR
FUTURE SOLAR STORAGE
EXISTING WOOD CHIP
WATER OR AIR, PUMPS

SOUTH ELEVATION

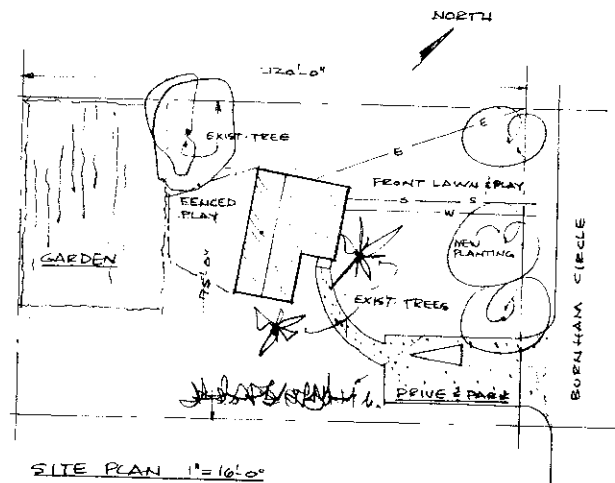
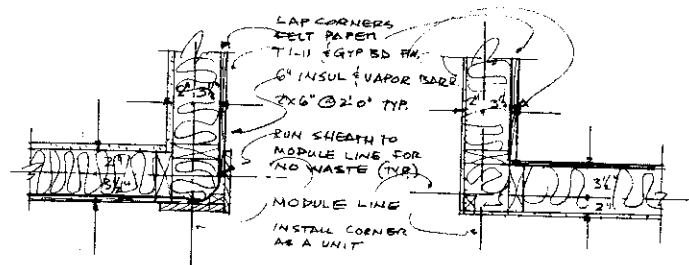
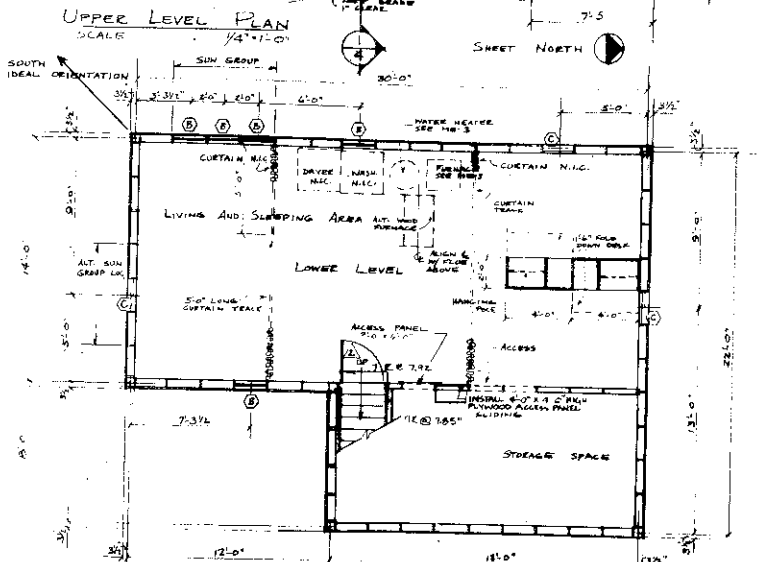
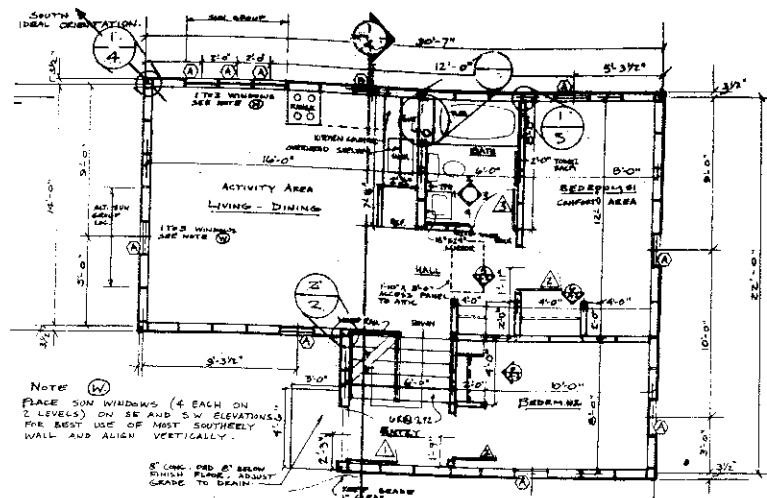


EAST ELEVATION

VOLUMETRIC HOUSE SCHEME

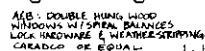
THE MAINE COMPETITION
1 SEPT 1970





PLANS, SITE & DETAILS
SCALE AS SHOWN

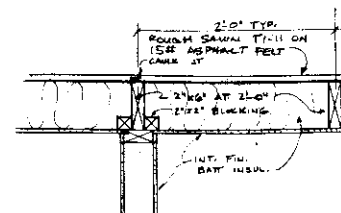
2.
#4



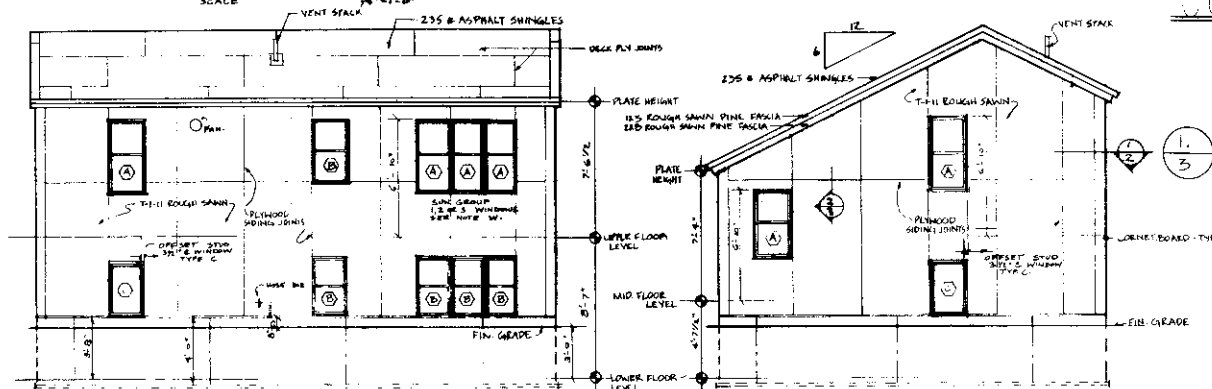
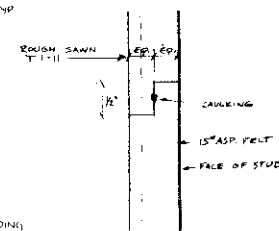
NOTE: USE INSULATING GLASS THROUGHOUT & PROVIDE SCREENS FOR ALL OPERABLE WINDOWS

CEILING: 1) LVR. BD. V-JOINT W/ SPACKLE END JTS

NOTES: ALL ROOMS TO HAVE 4" VINYL BASE
CLOSETS TO HAVE SAME FINISH AS ROOMS THEY ADJOIN
WINDOW & DOOR TRIM TO BE PAINTED



SCALE $1\frac{1}{2}'' = 1' = 0$



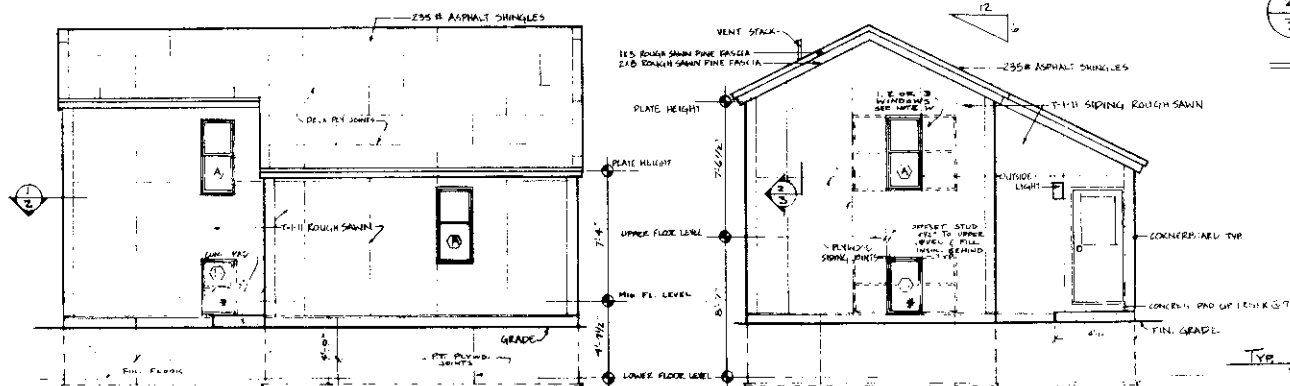
114" - 1' 0"

1) NOTE: SLOPE FIN. GRADE MIN $3/4"$ PER FOOT
AWAY FROM BUILDING. 6" MIN. IN
R.O. TYP.

$$|A|^{11} \approx |A| \cdot 0^{10}$$

2) NOTE: SET WINDOW & DOOR HEADS AT SAME HEIGHT.
FOR WINDOW ROUGH OPENINGS, SEE WINDOW TYPES ABOVE

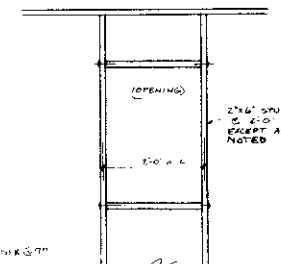
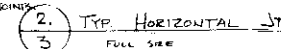
3) NOTE: USE END MATCHED T-Y JO SIDDING
OR USE APPROPRIATE LENGTH


$$f(\lambda) = 1 - \frac{1}{\lambda}$$

* MOVE EXIT WINDOW FROM SOUTHEAST TO NORTHEAST LOCATION WHEN SUN GROUP WINDOWS ARE PLACED 2 AND 2.

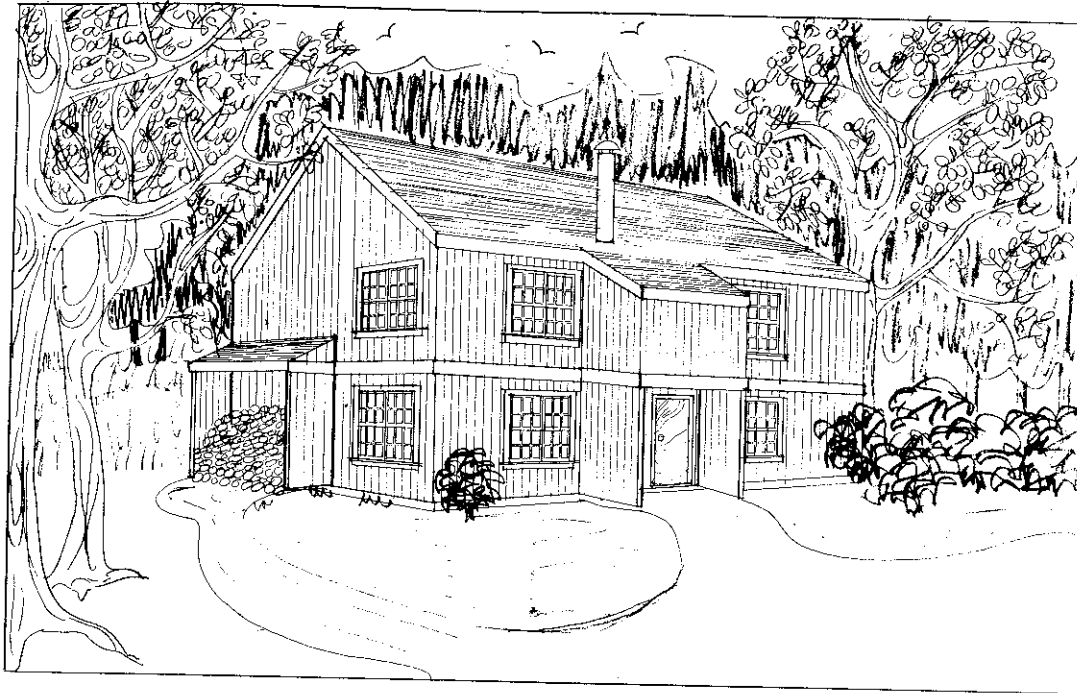
$1/4" \times 1.0"$

[Home](#)
[About Us](#)
[Contact Us](#)
[Privacy Policy](#)
[Terms of Service](#)



Year	Percentage of Population Aged 15 and Over Who are Illiterate
1900	20
1910	10
1920	8
1930	6
1940	5
1950	4
1960	3
1970	2
1980	2

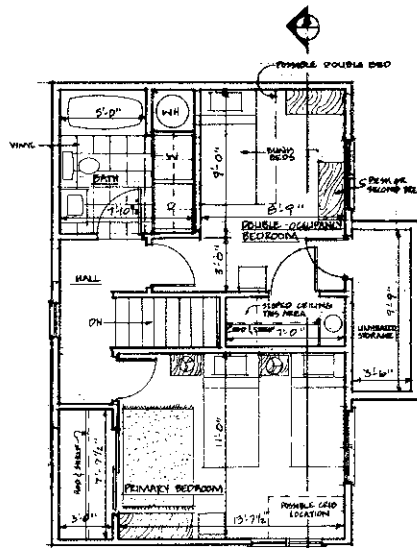
OF 4



SCHEDULE OF DRAWINGS

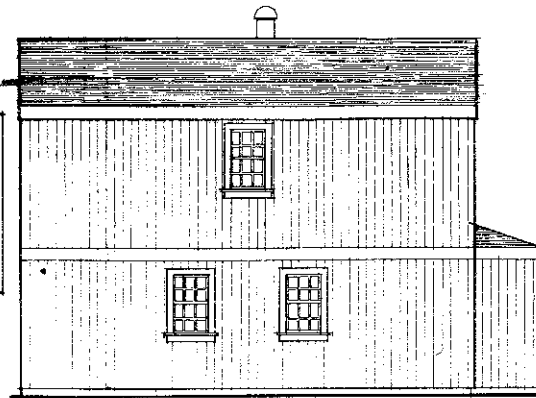
- 0 - TITLE SHEET
- 1 - PLANS & ELEVATIONS
- 2 - SITE PLAN & SECTIONS
- 3 - SECTION

LOW COST HOUSE



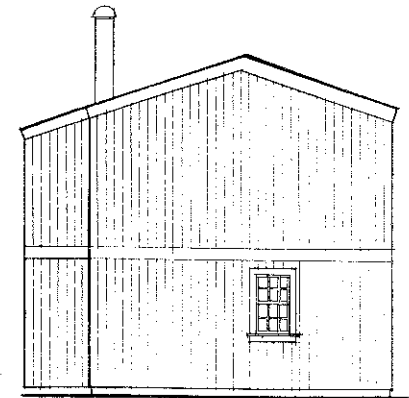
SECOND FLOOR

14'4" x 11'-0"



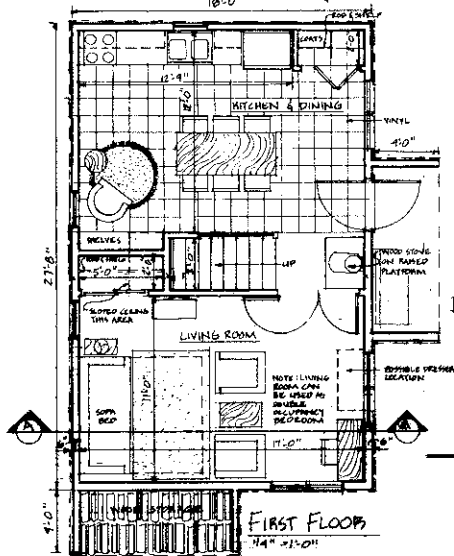
NORTH ELEVATION

14'4" x 11'-0"



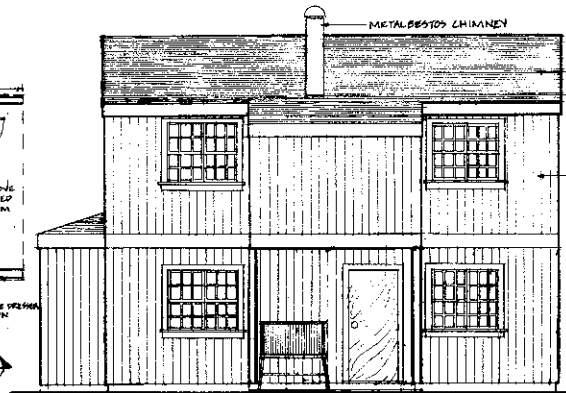
EAST ELEVATION

14'4" x 11'-0"



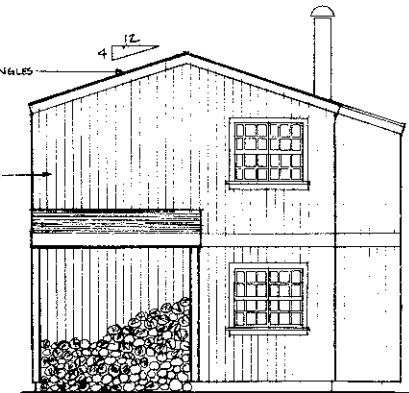
FIRST FLOOR

14'4" x 11'-0"



SOUTH ELEVATION

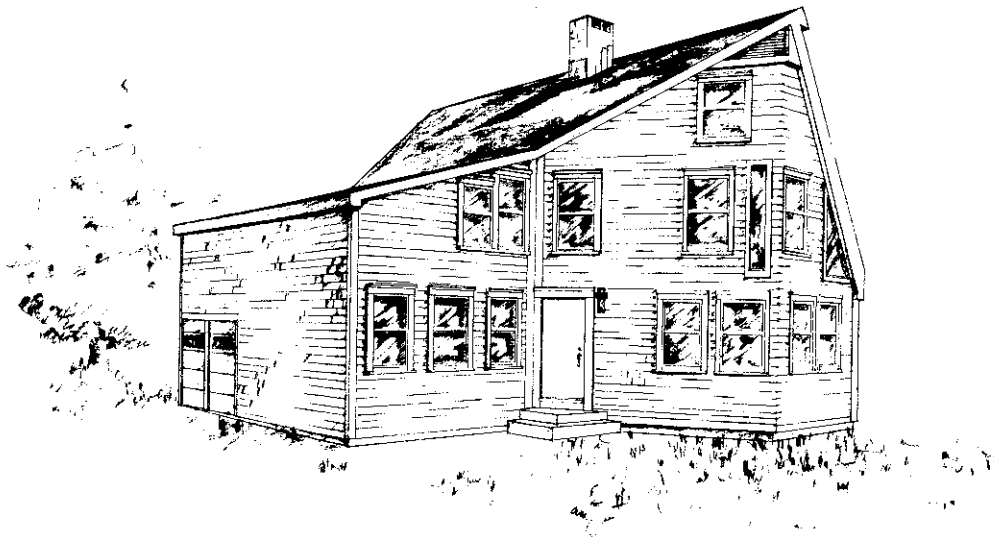
14'4" x 11'-0"



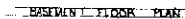
WEST ELEVATION

14'4" x 11'-0"

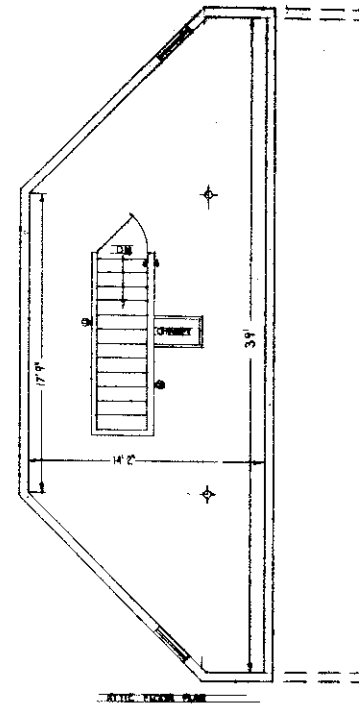
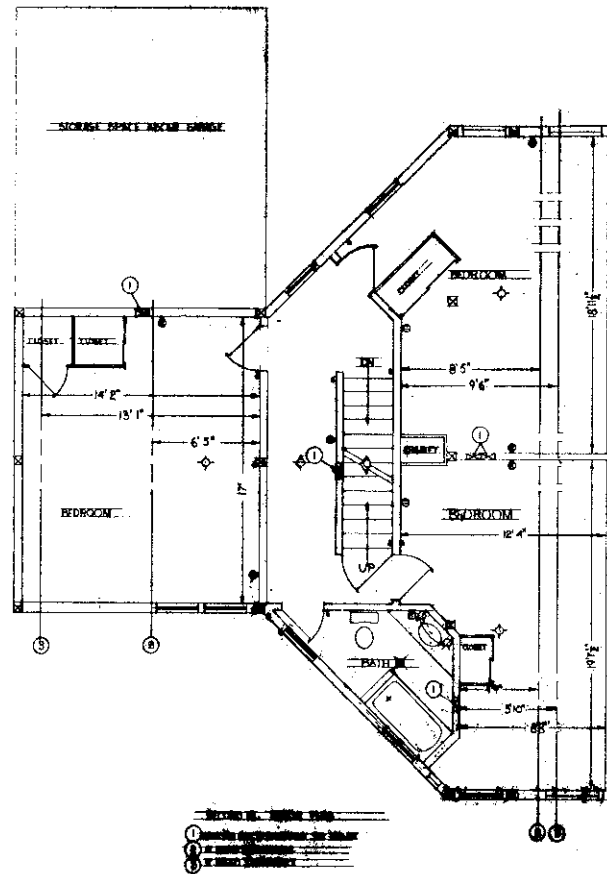
1

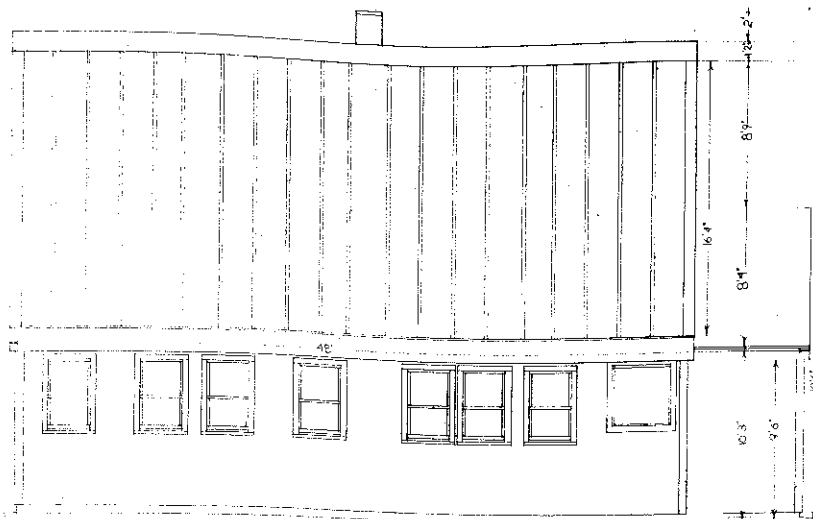


LOW COST ALTERNATIVE
HOUSING FOR MAINE

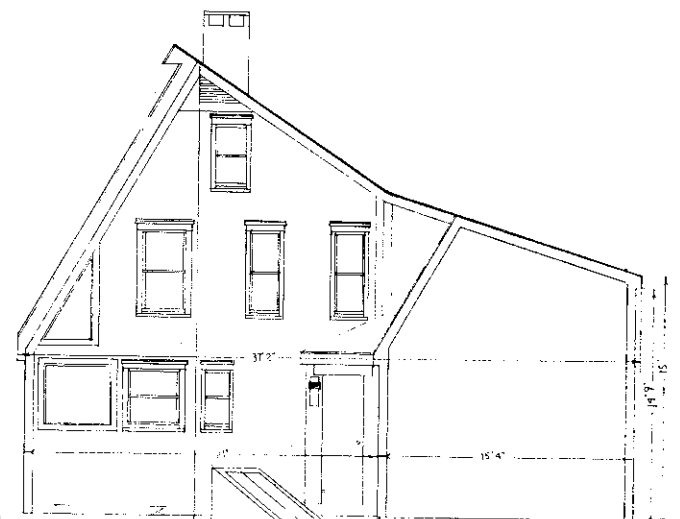


- FLOOR PLANS
SCALE 1/8" = 1'-0"

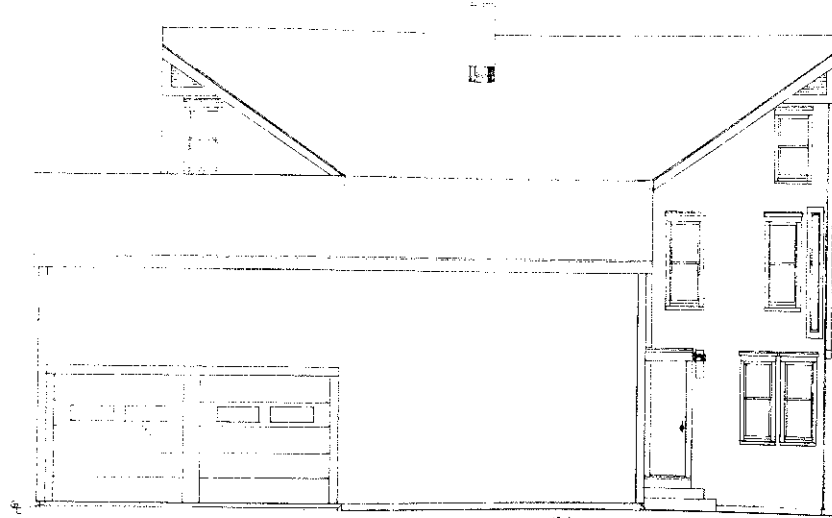




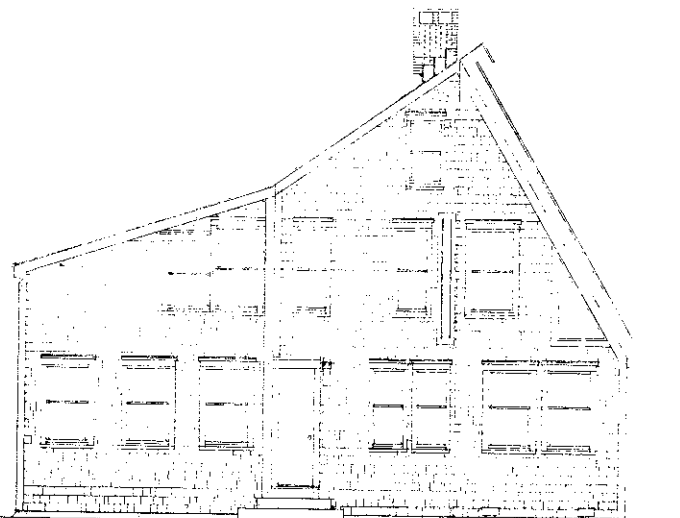
SOUTH ELEVATION SCALE $\frac{1}{4}"=1'$



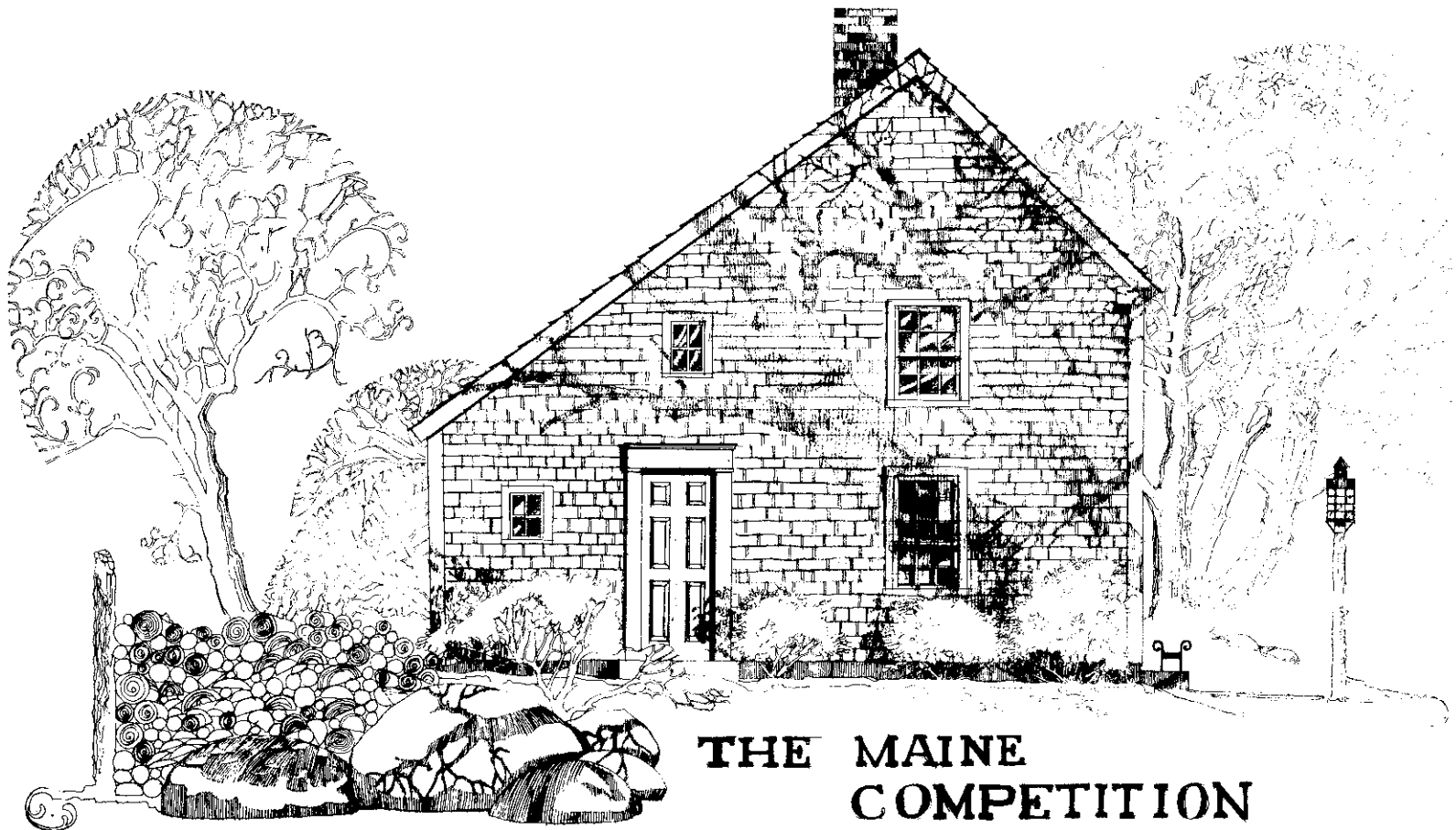
EAST ELEVATION SCALE $\frac{1}{4}"=1'$

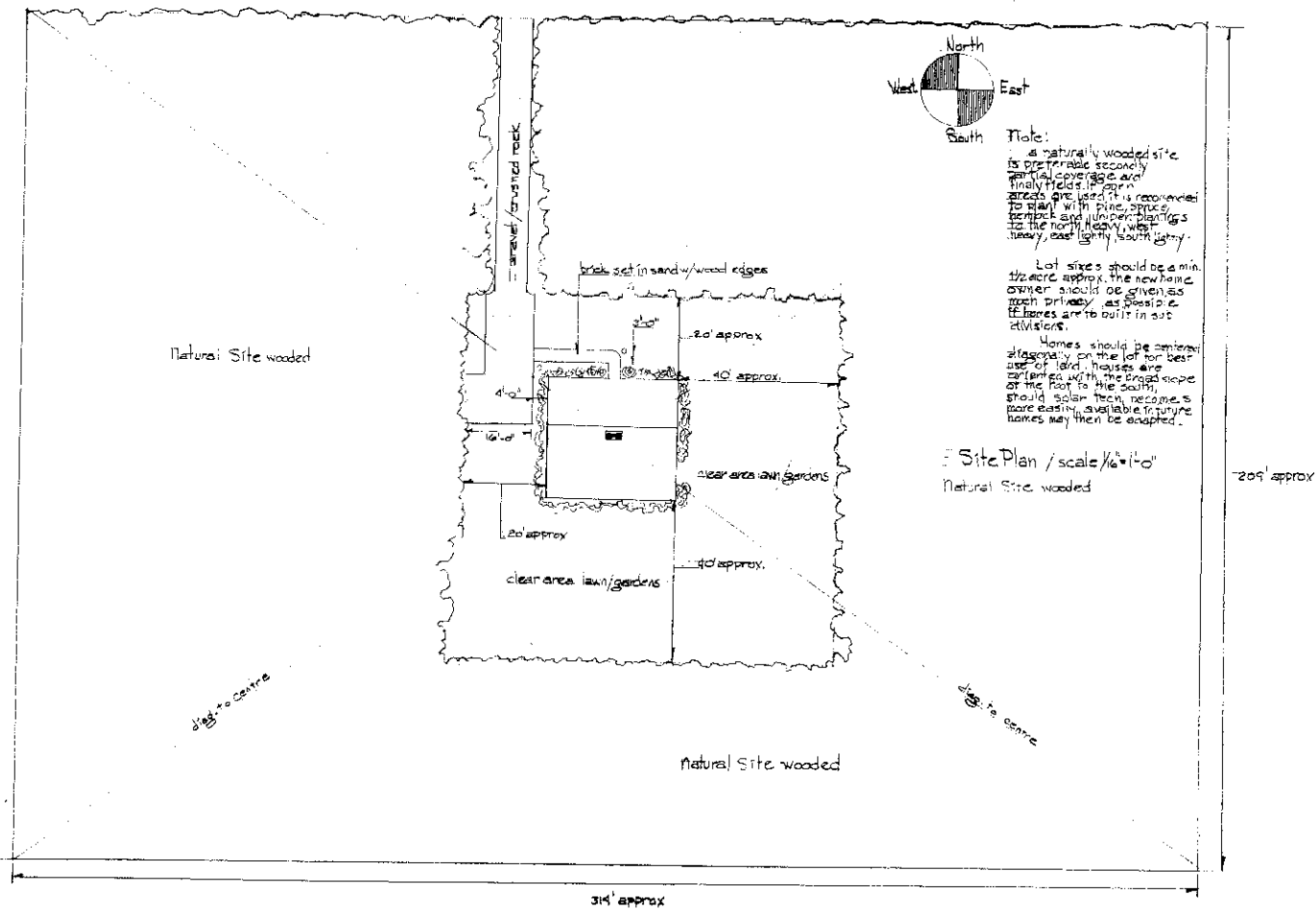


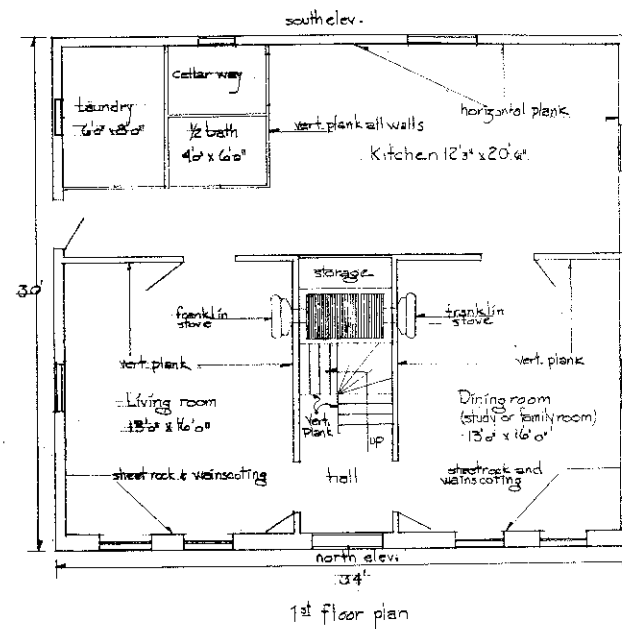
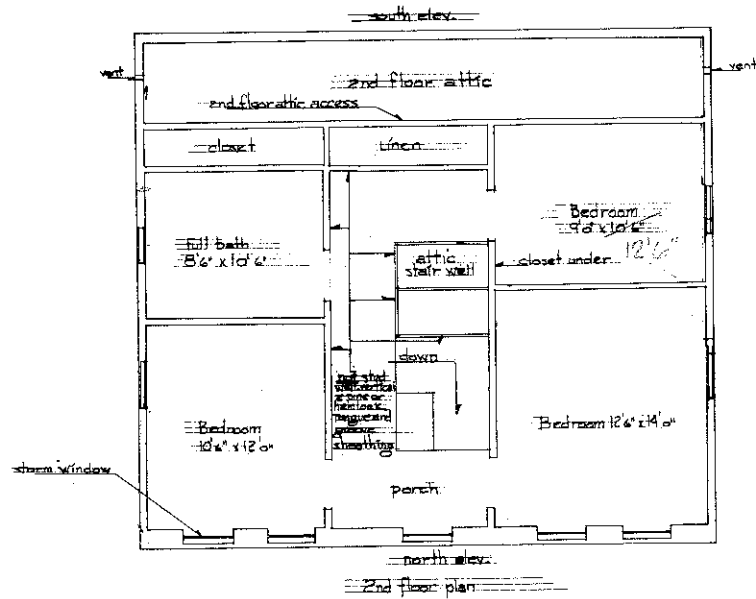
NORTH ELEVATION SCALE $\frac{1}{4}"=1'$

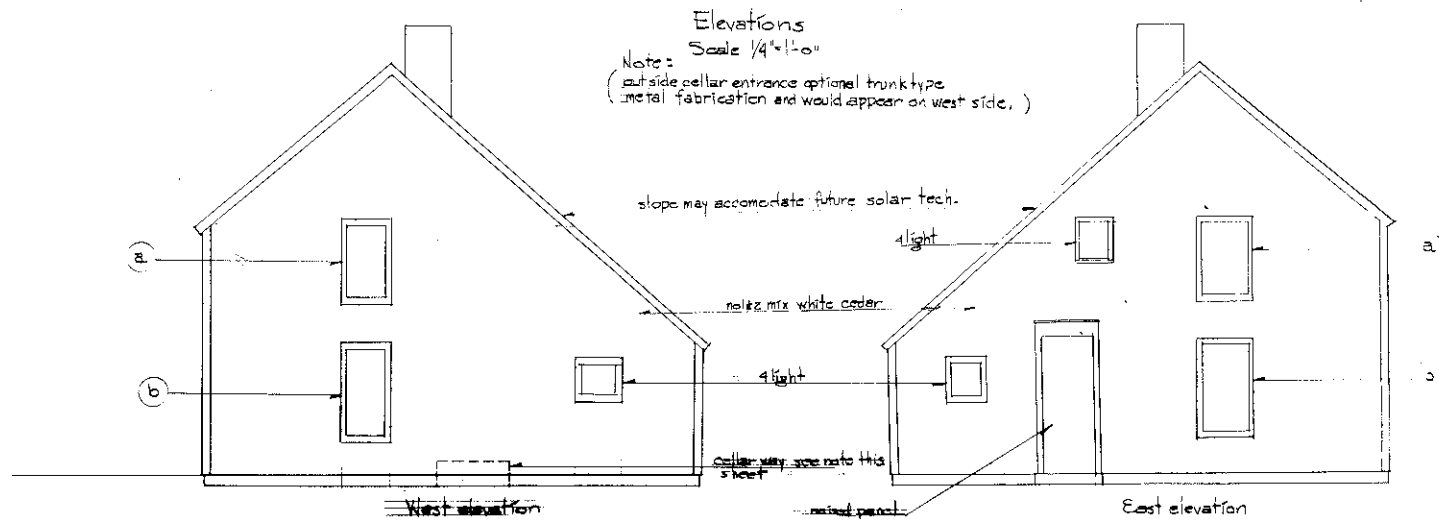
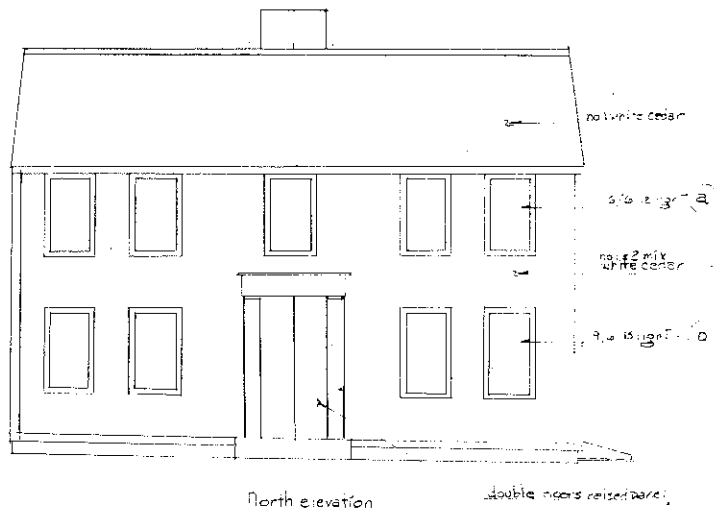
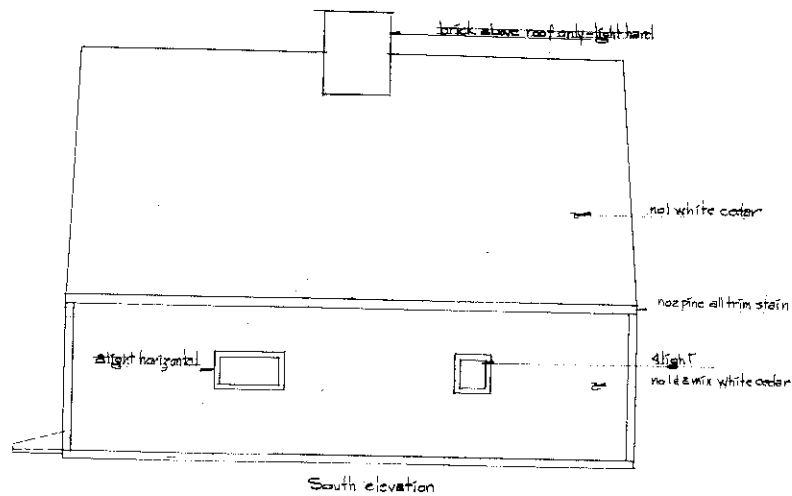


WEST ELEVATION SCALE $\frac{1}{4}"=1'$

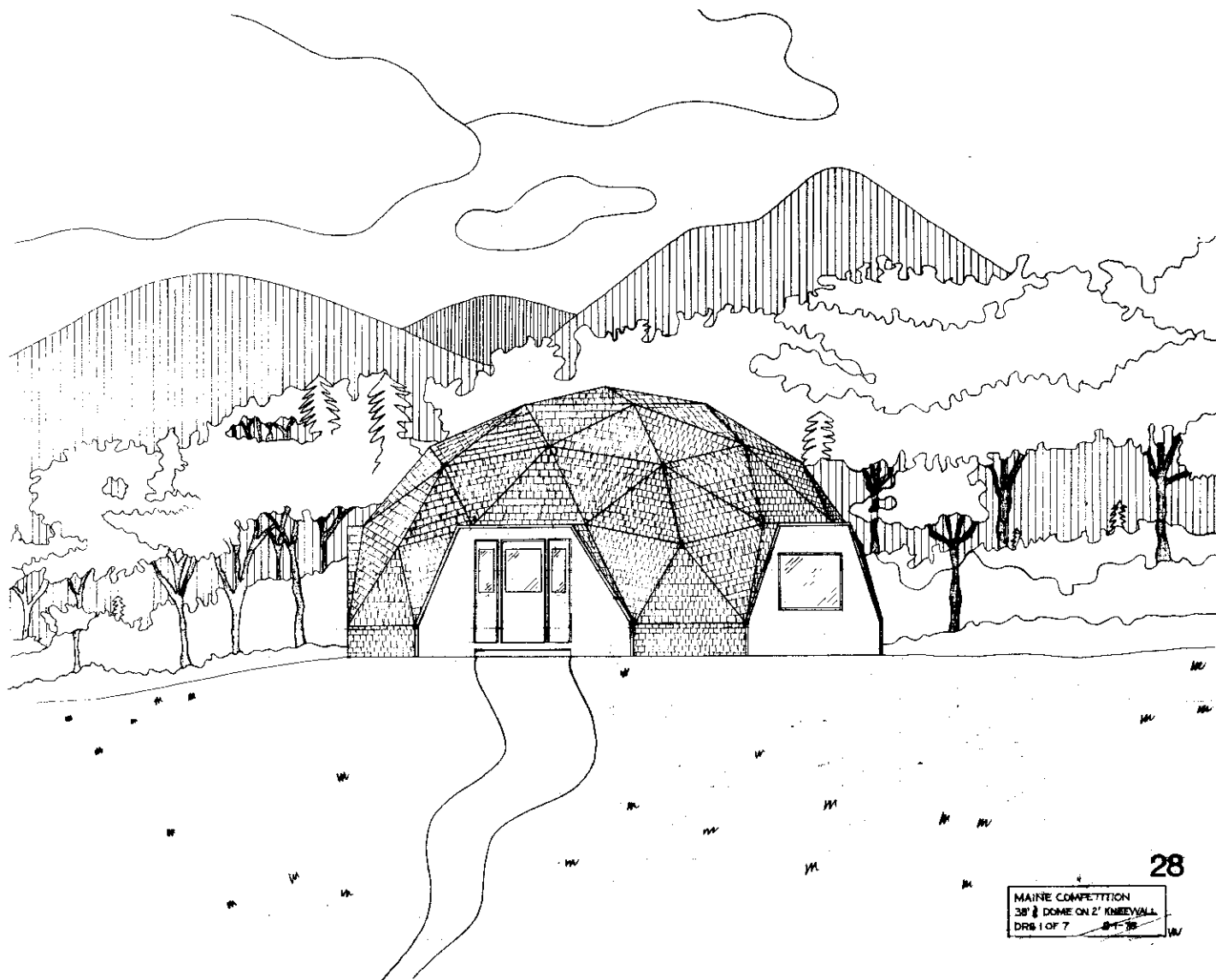




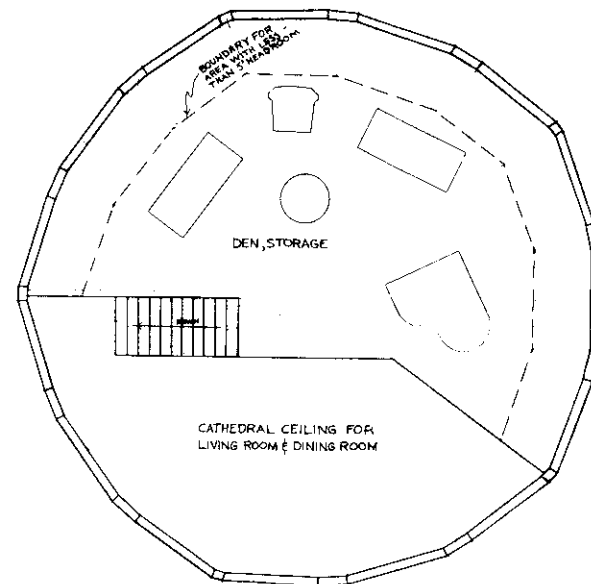
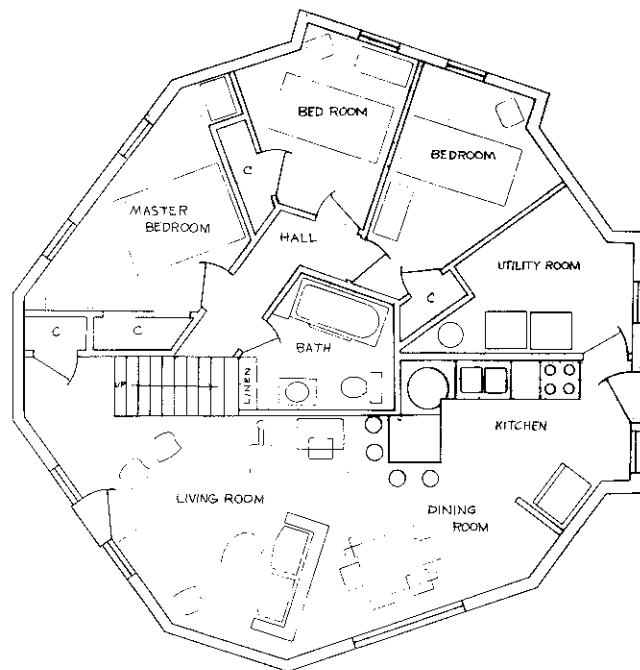




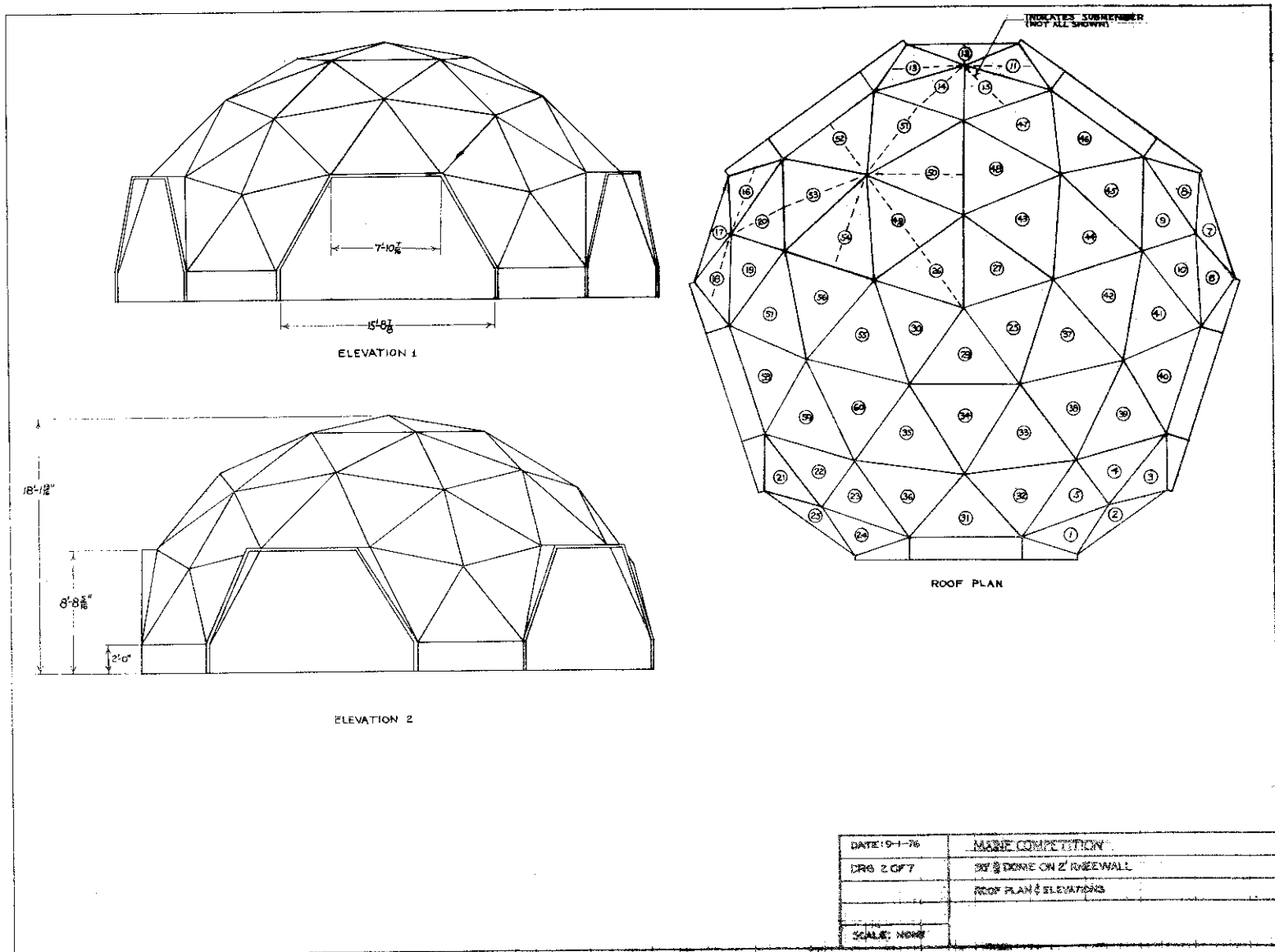
Elevations
 Note: Scale 1/4" = 1'-0"
 (outside cellar entrance optional trunk type
 metal fabrication and would appear on west side.)



MAINE COMPETITION
38' Ø DOME ON 2' KNEE WALL
DRG 1 OF 7
8-1-88

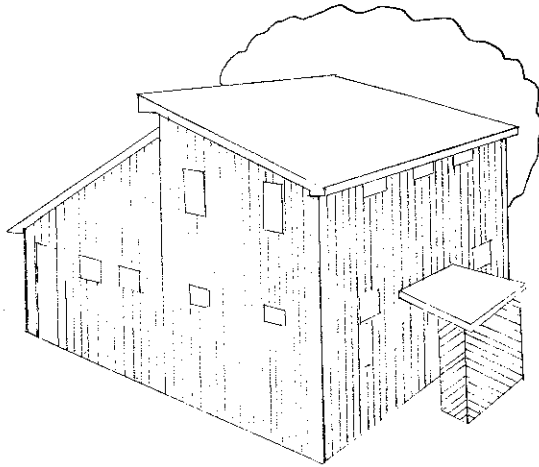


DATE: 9-1-76	MAINE COMPETITION
DRG 3 OF 7	36' $\frac{3}{4}$ DOME ON 2' KNEEWALL
DR BY:	FLOOR PLAN
SCALE: $\frac{1}{8}" = 1'$	



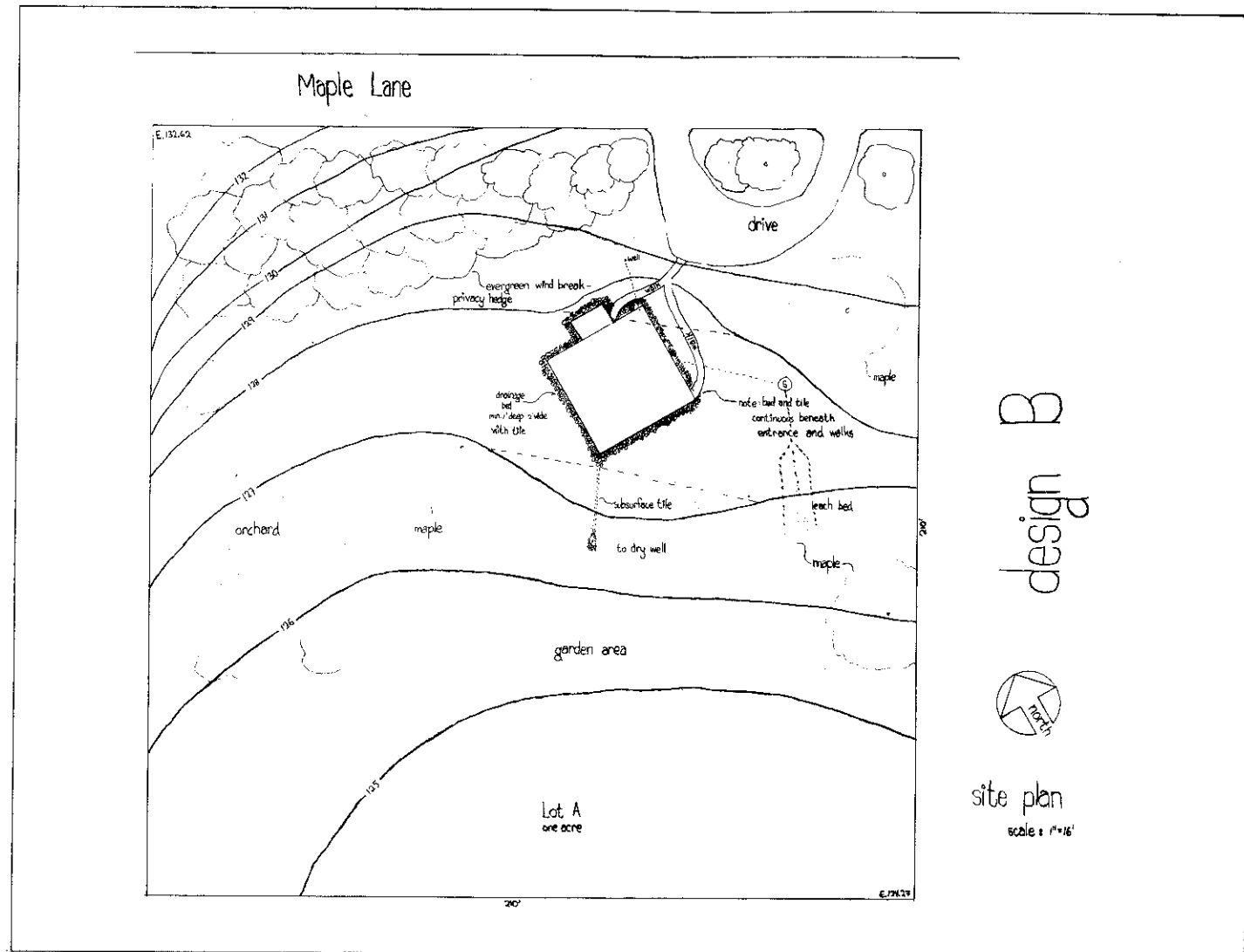
the Maine Competition
architectural design
for low-cost housing

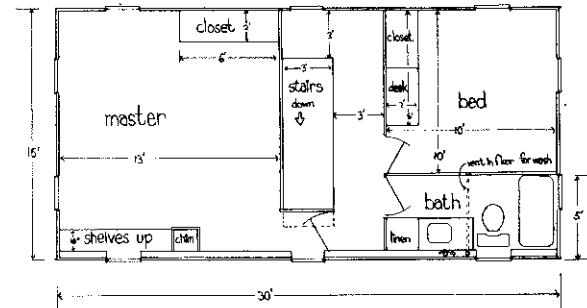
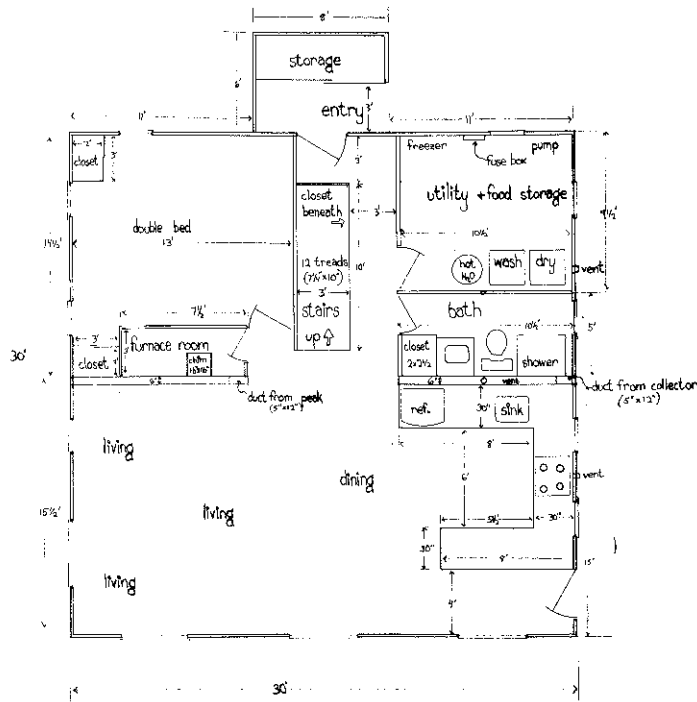
design portfolio



sketch

A

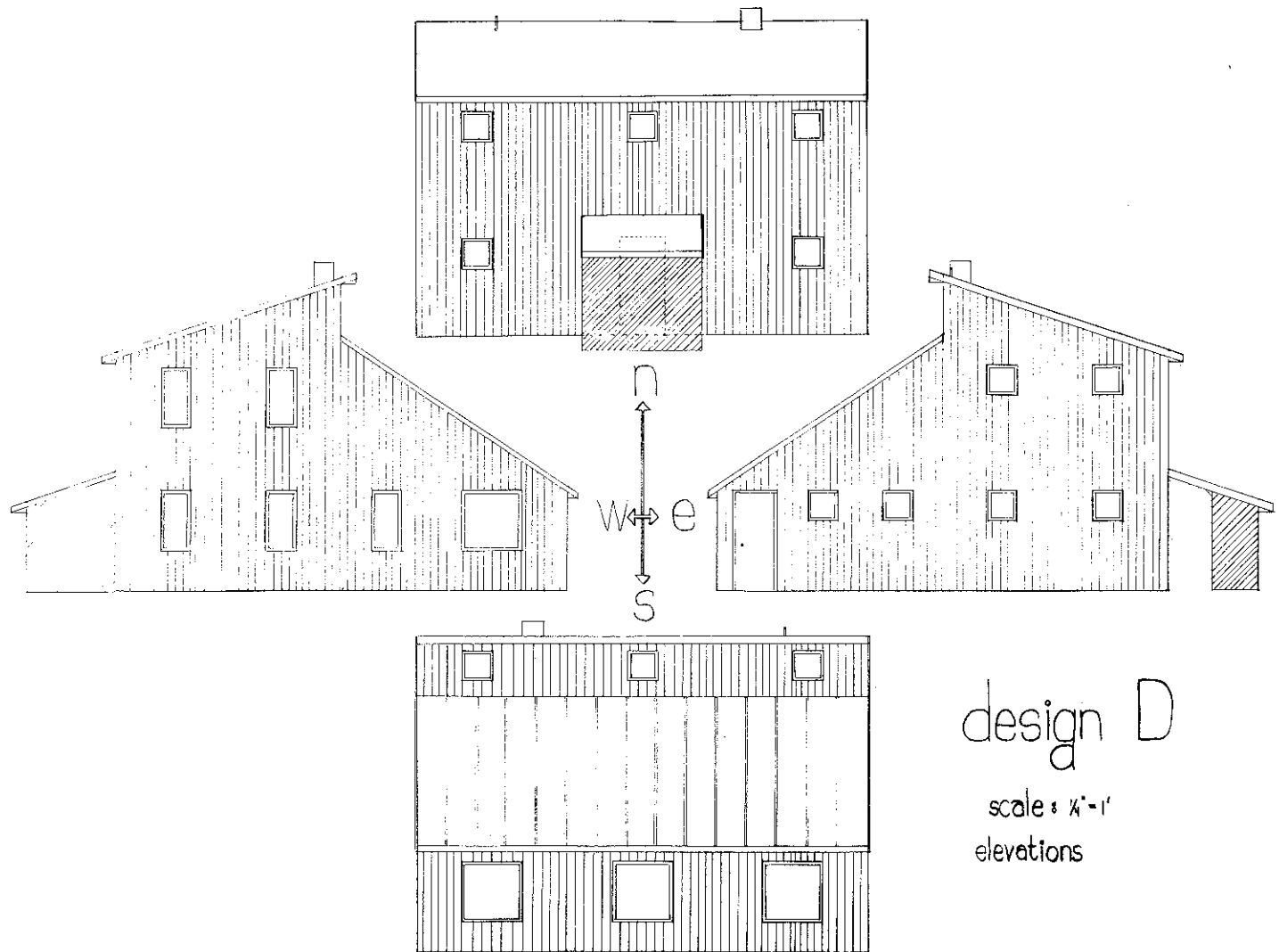




all windows two feet wide, three feet from corner or centered on side.

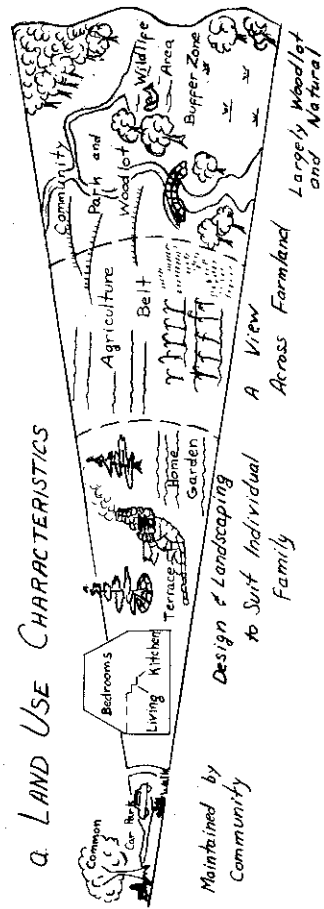
design C

scale: 1/4" = 1'

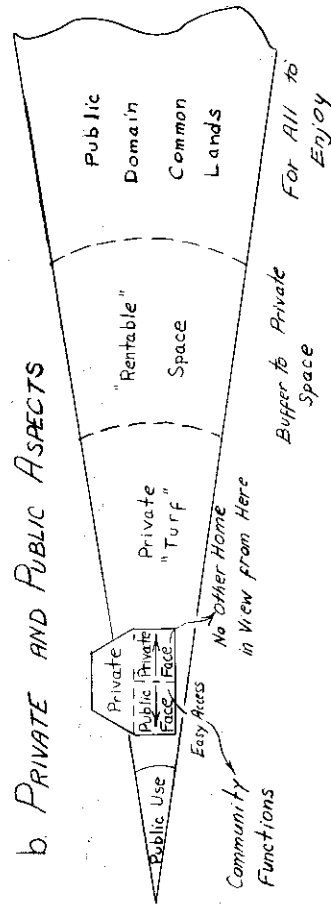


ZONAL MODEL

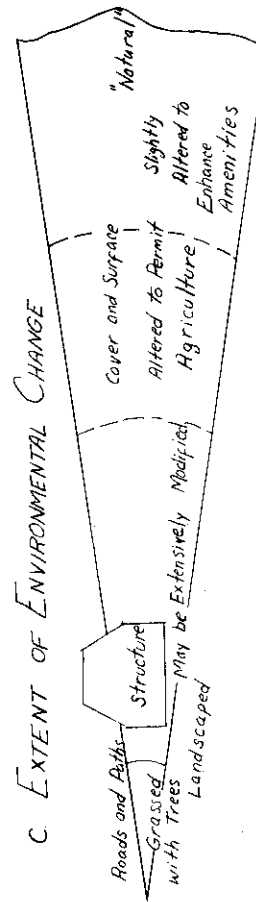
a LAND USE CHARACTERISTICS



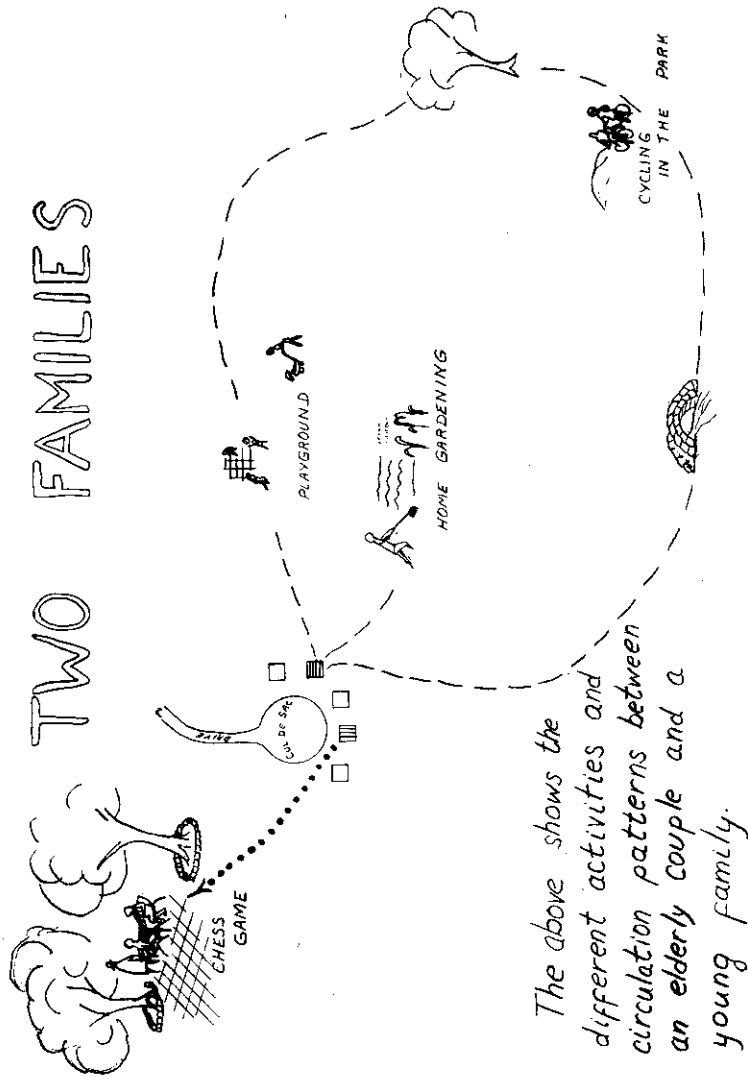
b PRIVATE AND PUBLIC ASPECTS



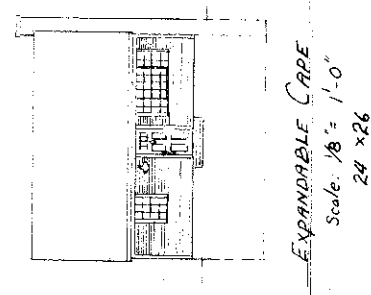
c EXTENT OF ENVIRONMENTAL CHANGE



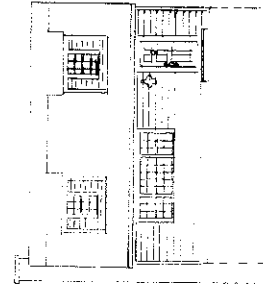
Sketch 1



Below are typical house plans that suit their different needs.



Sketch 3



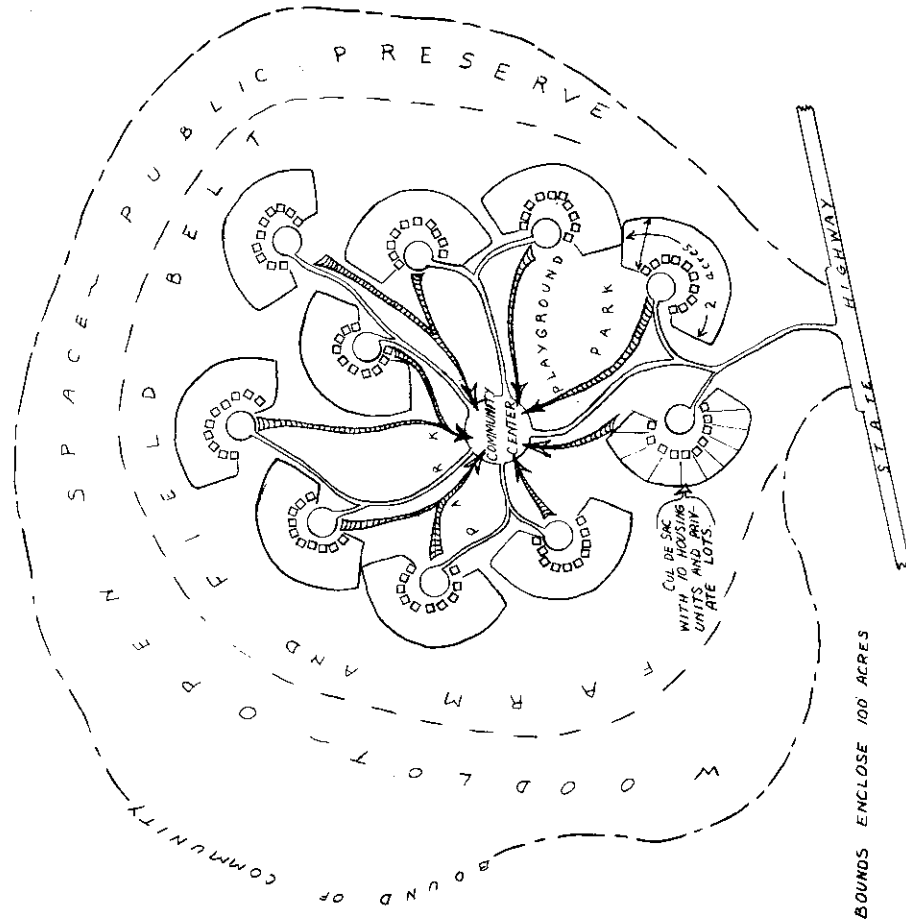
3 BEDROOM GAMBREL
24 x 30

MODEL of COMMUNITY PLAN

100 HOUSING UNITS

Showing how pedestrians have easy access to town center without having to cross roads

Accessibility to public lands, the unobstructed view and absence of intervening roads.



Sketch 2

NA
7235
M2
M385

**DATE DUE
GORHAM CAMPUS**

~~APR 10 1978~~

~~APR 24 1978~~

~~SEP 20 1979~~

~~FEB 5 1981~~

~~DEC 2 1982~~

~~DEC 10 1982~~

~~JAN 10 1985~~

UNIV OF MAINE - GORHAM



3 1390 00357443 9

USM LIBRARY-GORHAM
37 COLLEGE AVE
GORHAM, ME 04038-1088

